

*Frontispiece*

## INDUSTRY AND TRANSPORTATION

How many different ways of "making a living" are suggested by this picture?

# ESSENTIALS OF ECONOMICS

BY  
FRED ROGERS FAIRCHILD, Ph.D.

PROFESSOR OF POLITICAL ECONOMY  
YALE UNIVERSITY



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FAIRCHILD'S ESSENTIALS OF ECONOMICS

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## PREFACE

### AND SUGGESTIONS TO THE TEACHER

THE study of economics will generally bring to the student his first introduction to the social sciences. In entering this new field of study both teacher and student will encounter certain peculiar difficulties, of which three are worthy of special mention. (1) Economics, though the oldest of the social sciences, is much younger than the so-called "natural" sciences. It has not progressed so far as the latter in the determination of principles and the standardization of terminology. There are still some important questions of definition and principle upon which there is disagreement among the economists themselves. (2) In the study of economics the method of experiment is generally not available. Simple experiments, which test fundamental principles by application to everyday phenomena, smooth the path and excite the interest of the beginner in the study of physics, chemistry, or biology. In economics, however, on account of the nature of its subject matter, such experiments can seldom be used. (3) Economics suffers more than the natural sciences from the fact that most of the ideas and terms with which it deals are in daily use by everybody. Popular use is generally loose and inaccurate, while at the same time the student's familiarity with economic terms, such as wealth, money, capital, value, etc., often induces him to think he already knows all about these things. Economics has, at the very outset, the difficult task of giving precision to the loosely used

## 6 PREFACE AND SUGGESTIONS TO THE TEACHER

terms of everyday conversation and disabusing the student's mind of many preconceived fallacies.

The sole purpose of this book is to aid the beginner in acquiring clear and dependable knowledge of the important facts and the fundamental principles of the science of economics, to the end that he may be able to adapt himself intelligently to his economic environment and to face the economic problems of life with intelligence, self-reliance, and the zest of broad interest. With this end in view, the author has been guided by the following rules:

(1) The treatment has been made strictly scientific. The aim is to state the facts and explain them, to tell the truth. There is no propaganda. There is no attempt to show how things ought to be. The word "ought" is not in the vocabulary of science. It is believed that the teacher will have no serious difficulty in guiding the student who goes carefully through these pages to a realization of this essential character of all science. The student will readily see that before he can say how things ought to be he must know how things are and why they are.

(2) Precise definitions are given for all technical terms, and the use of such terms strictly as defined is consistent throughout the book. The technical terms of economics are generally in common, everyday use, and the definitions in this book have been made to agree as closely as possible with popular usage. But since popular usage is always more or less vague and inaccurate, exact agreement is not possible, and the teacher will always have to insist upon the rigid precision in definition which science requires.

(3) The essential facts and the fundamental principles are stated in the simplest and clearest language possible.

(4) In developing the principles of economics constant

reference is made to the practical facts of the student's everyday life and to the simpler business problems with which it may be assumed he is fairly familiar. It is this continual correlation of principles and facts which has to take the place of experiment in the social sciences. The author has sought to avoid the two extremes of abstract theory and the cataloguing of mere facts. Principles are useful only as they explain the facts. Facts are interesting only as they illustrate and demonstrate principles. This rule should be used to guide the classroom discussion and to excite the student to make his own applications of economic principles to everyday facts.

(5) The study is confined to fundamentals, upon which the science of economics has attained substantial agreement. On the frontier of every science are to be found problems whose solution requires further investigation, questions upon which there is disagreement among the authorities. Such topics do not belong in an elementary treatise. Discussion of the "pros and cons" of controversial questions has been avoided in this book. The purpose is to give the student a foundation of fact and principle upon which he can rely, and from which he can form his own judgments upon such controversial questions as he may later be called upon to face.

(6) In certain chapters liberal use has been made of schedules and graphs and mathematical illustrations. Students sometimes get the idea that such matters are especially difficult. This is a superficial view. Many of the principles of economics can be clearly stated and explained only by the aid of these devices. The student ~~who progresses through this book will find no mathematical or graphic demonstrations more difficult than are met by the beginner in arithmetic, algebra, or plane geometry.~~ There is nothing here more difficult or com-

plicated than the actual problems which are sure to arise early in any business career.

(7) The problems at the end of each chapter are for the threefold purpose of (a) clarifying and fixing the principles studied, (b) giving vitality to the principles studied by applying them in the field of everyday experience, and (c) training the student in economic reasoning. These problems are illustrative rather than comprehensive. The teacher can modify them almost without limit or can construct other similar problems. The student also can be asked to construct problems for himself.

(8) The references to other books are not intended to furnish a complete bibliography. For that, reference should be made to more advanced texts or special treatises or the catalogue of a good library. The references here are to standard books which may generally be found in the average school or city library.

The author makes grateful acknowledgment of assistance rendered by his colleagues in the Economics Department of Yale University. In particular, Professor Edgar S. Furniss read the entire manuscript critically and made numerous constructive suggestions, besides preparing many of the problems. Professor Irving Fisher, Professor Adolph H. Armbruster, Professor W. L. Crum, and Mr. John D. Häuslein have given the author the advantage of their special knowledge. Others who gave help through the medium of the graduate seminar in economics are Professor R. B. Westerfield, Professor H. G. Hayes (now of Ohio State University), and Dr. Norman S. Buck. The author's father, Professor A. B. Fairchild, has read the manuscript and contributed many helpful criticisms and suggestions.

FRED ROGERS FAIRCHILD

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## PART I. FOUNDATIONS OF THE SCIENCE OF ECONOMICS

### CHAPTER I

#### WHAT IS ECONOMICS?

Man is kept busy "making his living." — If a stranger from another planet were to visit this world, he probably would notice with some astonishment how busy the inhabitants are. He would see men, women, and children hustling about at something or other, all day long. If our visitor made inquiries, he would learn that almost everybody is busy "making his living," or getting ready to make his living. If he followed up this discovery, he would find himself face to face with some of the great truths about human life on the earth. In fact he would be at the threshold of the study of economics.

Man wants more than necessities. — "Making one's living" does not mean simply keeping alive. One of the most remarkable things about human beings is that they are never satisfied with the mere necessities of life. A horse or a cow that has plenty of food and comfortable shelter has no further wants to be satisfied. Not so with men and women. Of course they must have the necessities — food, clothing, and shelter from the weather. Without these things they would die. But these are just the beginning of the things that human beings want. When we think of food, we do not think so much of escaping starvation, as of the enjoyment of eating. So we crave variety of food and fancy dishes. A glance at almost



any family's dinner table or at the tables in a restaurant will show that eating is a good deal more than a means of merely keeping alive. Of course the first purpose of clothing is to cover and protect the body. But if this were all we cared for, what would become of the fine clothing stores and shoe stores, the expensive tailors, dressmakers, and milliners? We wear elaborate and expensive clothes because we like to make a good appearance and attract the favorable attention of our friends. The houses we live in are not mere shelters from the weather. A walk along a residence street of any village or city in the United States, or among the farmhouses of the country, will show how far our homes excel the rude huts which would suffice to keep us alive. Inside our houses are furniture, pictures, and a multitude of things, nine tenths of which are not necessities of life at all. In fact most of us take the necessities for granted and are apt to give them little thought. People realize this when they go camping and find how little they actually need when they "lead the simple life."

**No limit to human wants.** — There is no limit to the wants of man. Any particular want may be quickly satisfied. It takes only a little food to satisfy hunger, only a little clothing to keep the body warm. But just as soon as one want is satisfied, others appear. We want handsome clothes and ornaments to satisfy our vanity. We want to live in fine houses. We love beautiful things, and so want music and works of art. We crave knowledge and want books and all the instruments of science and learning. We desire recreation and amusement and so want baseball outfits and tennis rackets, sailboats and automobiles, theaters and operas. And the more of all these things anybody has, the more his horizon broadens, showing a tempting vista of new desires to be satisfied. Few human beings ever reach the point of complete satisfaction. In

spite of the fact that *each* separate want can be completely satisfied, there is no limit to the *total* wants of man.

**Man must work for what he gets.** — When Aladdin, in *The Arabian Nights*, wanted anything, he rubbed his magic lamp, whereupon a genie appeared and immediately granted his desire. If our wants could be satisfied in this manner, the world would be a very different place and there would be no science of economics. The most important characteristic of man is the extraordinary number and variety of the things he wants. And the most important characteristic of the world on which man lives, is that very few of the things he wants are furnished freely and abundantly without effort on his part. Hence the fact that most of his time and energy is devoted to a never-ceasing struggle to secure those things that will satisfy his wants; that is, to “making his living.”

**Some examples.** — This is what occupies the greater part of the active time of most men and women. The business man is at work in the store or the factory or the office. The farmer, the miner, the factory worker, the railroad engineer, the trolley motorman, all are at work at their several jobs. Bankers, lawyers, physicians, clerks, and stenographers are busy in their offices. At home women are engaged in preparing the food, caring for the house, making and mending the clothing, etc. All these people, and many others whom we might name, are occupied in the great task of providing the things that satisfy human wants and make life possible and enjoyable. Boys and girls do not escape. Some are at work in factories, stores, farms, or at home. Even those who are attending school are getting an education in order that they may later join the great army of workers; they are getting ready to make their living.

**What is economics?** — It is the purpose of economics

to describe and explain all the institutions and activities by which mankind provides for its many wants. *Economics is the science of human wants and of the means by which man obtains the things that satisfy them.*

What is a science? — We have called economics a science, and it is well that we should understand exactly what we mean by a science. *A science is a body of knowledge about some subject, arranged in an orderly way to explain all the important facts about the subject.* For example, astronomy is the science of the heavenly bodies. It consists of all the knowledge that we have about them, carefully arranged so as to explain their origin, their movements, and their relations to one another. Astronomy tells why the sun rises and sets, when there will be an eclipse of the moon, and other important facts about the earth, the stars, and the planets. In the same way biology is the science of all living beings, botany is the science of plants, and there are numerous other sciences, each dealing with some particular subject.

What the study of economics includes. — The subject of economics is human wants and the means by which they are satisfied. Its study will take us into some of the most important and interesting features of human life. For example, we shall learn how wealth is produced, why it is transported across the country and over the seas from far-away lands, how it is bought and sold. We shall seek to understand the organization of corporations, the operations of banks, the use of money, the nature of foreign exchange, risk, insurance, and speculation, rent and interest, the problems of the labor unions, of the tariff, of the trusts, why prices are high or low, the difference between the crowded city and the thinly settled farming country, how much the government takes from us in taxes and what the government does for us, why.

some men are rich and others poor. It goes without saying that the study of economics should prove interesting and worth while.

### EXERCISES

1. Write an account of the principal things done during a single day (1) by your father, or some other man, (2) by your mother, or some other woman, (3) by yourself.

2. Which of the acts mentioned in the answer to Question 1 would be called "earning one's living"? Why?

3. What would be the result in your own town or city or neighborhood if everybody stopped work and loafed for one day? For one week? For one month? For one year?

4. Write a list of the wants you have had during one day and of the things that have satisfied them.

5. Write a list of some of the wants you have not been able to satisfy.

6. Which of the things in the answers to Questions 4 and 5 were necessities?

7. Do you know any person who has everything he wants?

8. What is a science? Name and explain some examples.

9. Write a list of some important questions which you think should be answered by the science of economics.

References for further study. — Walker, F. A., *Political Economy*, Third Edition (1888), pages 1; 19-22. Mill, J. S., *Principles of Political Economy* (any edition), "Preliminary Remarks;" e.g., Ashley Ed. (1909), page 1-21. Fisher, I., *Elementary Principles of Economics* (1912), pages 1-5. Fetter, F. A., *Economic Principles* (1916), pages 3-10. Ely, R. T., *Outlines of Economics*, Third Revised Edition (1916), pages 3-7. Marshall, A., *Principles of Economics*, Seventh Edition (1916), pages 1-5; 38-48. Clay, H., *Economics for the General Reader*, American Edition (1918), pages 1-14. Johnson, A. S., *Introduction to Economics*, Revised (1922), pages 8-14.

## CHAPTER II

### WEALTH

**What is wealth?** — We have learned that man desires innumerable things to satisfy his wants. Some of the things, like the air and the sunlight, are furnished freely by nature. But such things are very few. Practically everything that man wants must be secured by an effort on his part. To these things we generally give the name of *wealth*.

Wealth is probably the most important word in the whole science of economics. Exactly what does it mean? Everybody has an idea of wealth, as meaning abundance of possessions, the opposite of poverty. We all have an idea of what we mean by a wealthy man, or a poor man. Yet there are many families about us whom we should hardly call either wealthy or poor. But if they are not wealthy, does that mean they have no wealth? This brings us to the question, what is wealth? That looks like an easy question, since wealth is something we see all about us; we talk about it and read about it in the papers every day. Yet when we stop to think exactly what we mean by wealth, we begin to get into confusion.

**Importance of exact definitions.** — This trouble meets us at the beginning of any new study. The everyday words that we have always used never have precise meanings in our minds. We have a general idea of what we mean by such words as "heat," "cold," "wind," "light," "energy," "plant," "animal," "money,"

"income," and so on. Our ideas do well enough for ordinary conversation. But when we begin the study of any science, we find that it is necessary to have exact definitions of such terms. This is especially important in the study of economics, because the science of economics deals with common things that are met with every day in the lives of all people, in business, in the home, on the street, at play, everywhere.

**Definition of wealth.** *Wealth consists of all useful, material things owned by human beings.* We must study this definition carefully.

**Wealth is useful.** — First, wealth must be useful. Anything that satisfies a human want is useful. *The quality of a thing which makes it satisfy a human want, that is, which makes it useful, is utility.* These are terms which are in common use and are easily understood. We pick up an old, rusty nail on the road and toss it away, saying it is "useless." We mean that it is not able to satisfy any want of ours; that we "have no use for it." We pick an apple from a tree because we are hungry and the apple will satisfy the want of food. Then the apple is "useful." It has utility. The rusty nail has no utility because it is unable to satisfy any human want.

When we say that anything is useful, or has utility, we do not mean that it is good for us in a moral sense. It may do harm; it may be injurious. Utility means simply the power to satisfy a human want, whether the want is good or bad, wise or foolish. Whisky has utility because it satisfies men's desire for drink, even though it may do them harm. The jimmy which the burglar uses to break into a house has utility, because it satisfies a want of the burglar. The words *useful* and *utility* do not imply anything about the moral character, the goodness or badness, of the want that is satisfied.

**Wealth is material.** — Second, wealth must be material. A material thing is anything that has substance, that has weight, that can be handled. If one looks about a schoolroom he will see dozens of these material things: books, chairs, desks, pencils, pictures, maps, and so forth. Some things are not wealth because they are not material. Is good health wealth? No. It is a very excellent and desirable thing. But it is immaterial and therefore not wealth according to our definition. The strength of a work horse or the speed of a race horse, the skill of a pianist or an actor, the beauty of a sunset; none of these things is wealth, because none is material.

**Confusing wealth and utility.** — By remembering that all wealth is material we shall avoid a common mistake. For example, people sometimes talk about the strength of a horse as if that were wealth. But strength is an *immaterial* thing. It is not the strength of the horse that is wealth, but the horse itself. The mistake comes from confusing the horse, which is an object of wealth, with those qualities which make the horse useful, confusing wealth and utility. If we should call both the horse and his strength wealth we should clearly be counting the same thing twice. In the same way, ice is wealth, but its coldness is not. The hardness of steel, the fertility of the soil, the beauty of a statue, are all qualities of wealth but are not wealth themselves.

**Wealth is owned.** — Finally, to be wealth, a thing must be *owned*. The book on a student's desk is owned, either by himself, by his father, or by some other person or persons. But suppose it is furnished by the school. Is it owned by anybody then? Yes, for it belongs to the city or the school district, which is an organization of many human beings, the citizens. Some things are owned

by individuals, like the knife in your pocket or the clothes you wear or the chairs in the living room at home. Other things belong to groups of persons, as where two or three men form a partnership and buy a store, which belongs to all of them together. Or a great corporation, like the Standard Oil Company, which is made up of thousands of persons, owns lands and oil refineries, wagons and automobiles. Finally the government, which is an association of all the citizens, is the owner of many articles of wealth. Some things, although both useful and material, are not wealth, because they are not owned. Is air wealth? It is material. And it is about the most useful thing in the world. But nobody owns it, and therefore it is not wealth. The sun and the moon are not owned by human beings and so are not wealth.

**How to tell what is wealth.** — When we want to know whether a certain thing is wealth, we have to ask just three questions: (1) Is it *useful*? (2) Is it a *material* thing? (3) Is it *owned* by any person or group of persons? Whenever the answer is "yes" to all three of these questions about anything, then that thing is wealth. If the answer is "no" to one or more of the questions, the thing is not wealth.

**Are human beings wealth?** — The question sometimes arises whether human beings themselves are wealth. Certainly slaves are wealth. They are useful, material, and owned by their masters. But how about free men and women and their children? If we should say they were owned by themselves or by their parents (in the case of children), then they would fit our definition and would be wealth. But it is not customary for us to think of free human beings as owned, and we shall therefore not consider them wealth. In economics, however, we shall have to study the utility of free human beings and



their services in satisfying human wants just as we study the utility and services of wealth.

**Another definition of economics.** — Since it is wealth that man seeks for the satisfaction of his wants, we have another and shorter definition of economics: namely, *economics is the science of wealth*. The two definitions should be understood to mean practically the same thing.

### EXERCISES

1. State whether each of the things in the following list is or is not wealth and give reasons: (1) a dwelling house, (2) a schoolhouse, (3) a sunset, (4) a painting of a sunset, (5) an opera singer, (6) a ton of coal, (7) the heat from a furnace that heats a dwelling house, (8) sunlight, (9) the weeds in a garden, (10) the trees in a farm wood lot, (11) the climate of southern California, (12) a lump of ice, (13) a cigar, (14) the strength of a farm horse, (15) a rattlesnake.

2. What is a definition? Look up the word in the dictionary. Give three examples.

3. What is the everyday meaning of a *point*? A *line*? How are these words defined in the science of geometry?

4. Why are the definitions of so many everyday words given in geometry?

5. Write a list of ten useful things and explain why each is useful.

6. Write a list of five useless things and explain why each is useless.

7. Is smoking tobacco useful? Why?

8. Are human beings ever wealth? Explain.

9. When the slaves were set free in the United States, what was the effect on the country's wealth?

**References for further study.** — Fisher, I., *Elementary Principles of Economics* (1912), pages 3-11. Mill, J. S., *Principles of Political Economy*, "Preliminary Remarks." Walker, F. A., *Political Economy*, Third Edition (1888), pages 3-5. Clay, H., *Economics for the General Reader*, American Edition (1918), pages 389-391.

## CHAPTER III

### INCOME AND PROPERTY

**Services of wealth: income.** — When wealth satisfies human wants, we say that it furnishes *benefits* or renders *services* to men. *The benefits, or services, of wealth are the desirable events it causes for human beings.* A house furnishes shelter. Giving shelter is the benefit or service of a house. Yielding apples is the service or benefit of an orchard. The service of a sweater is giving warmth and protection from the cold. The service of a bracelet is adding to the attractiveness or satisfying the vanity of the wearer. We might thus go through a list of thousands of kinds of wealth and name the services or benefits furnished by each. We use the word *income* to mean *the benefits or services rendered by wealth or by free persons*. All wealth yields income, and we may define the utility of wealth as the power to yield income.

**Disservices or costs of wealth.** — But all the events which wealth causes are not desirable. A house not only furnishes shelter; it also requires painting and repairing and makes its owner pay money for insurance and taxes. We cannot escape these undesirable events of wealth, but we put up with them in order to receive the desirable events or benefits. *The undesirable events caused by wealth are called the disservices or costs of wealth.*

**Net income.** — All wealth yields both income and costs. The costs are borne in order to get the income, and the income of any article of wealth must always be of more importance than the costs; otherwise no one would care

to own that particular article. It is easy to think of examples to illustrate this truth. A storekeeper has a horse and wagon to deliver goods to his customers. The horse is an article of wealth. The income from the horse is the pulling of the wagon. The costs of the horse are its food, stable room, shoeing, grooming, and other care. The storekeeper would not bear all these costs if the pulling of the wagon were not worth more to him than the costs. But some day the horse will grow old and feeble. He can pull the wagon only slowly and a few hours a day. Finally the time comes when the work he does is not enough to make it worth while to pay for keeping him. As people say, "He isn't worth his keep." The owner no longer wants him, and he will be disposed of.

*The difference between the income and the costs of any article of wealth is its net income.* As we have just seen, there must always be some net income or the article will not be wanted. Generally, then, when we speak of utility we mean the power to yield a net income, that is, to yield an income greater than the costs. This explains more exactly what is meant by the term "useful" in the definition of wealth.

**The ownership of wealth.** — We learned in Chapter II that to be wealth anything must be (1) useful, (2) material, and (3) owned. We have seen what is meant by "useful" and "material." Now we must look particularly into the meaning of the *ownership of wealth*. When a person owns an article of wealth he has the right to enjoy all the income of that wealth. Other people are not permitted to take any of its services or interfere with the owner's use of it. The owner is protected in his property right by the laws and customs of the community in which he lives. For example, a man owns a house and

lot. He has the right to all the services of the house and lot. Other persons are prevented from interfering with his enjoyment of these services. So a man owns the clothes he wears, the food on his table, his automobile, and many other things.

**Property.** — In economics the word *property* is generally used to stand for ownership. Property, property right, and ownership all have the same meaning, which may be defined thus: *Property is the right to income; that is, the right to the benefits or services of wealth or of free persons.* As regards wealth, this means the right to have wealth and to use it. Some examples have already been given. The right of the owner to have and use his house and lot is property. But property rights are not always so simple as this. Suppose the owner rents the house and lot for a year. Then the tenant has a property right in the house; i.e., the right to its use for one year. The tenant's right is called a lease. A mortgage on a farm is property. The holder has a right to receive interest and the repayment of the loan. If he is not paid, he may "foreclose" and have the farm sold in order to get the money that is due him. The owner of the farm has given up some of his rights in the farm. A "right of way" is property. It is the right to a certain use of a piece of land; i.e., the right to cross it on a certain path.

**Property in free persons.** — Property may refer to free persons as well as to wealth. For example, a baseball player signs a contract with a manager agreeing to play for him exclusively during the coming season. This gives the manager a certain property, that is, the right to receive certain services from this player. Theatrical and moving pictures managers have property rights to the services of actors and actresses. Every employer has a property right to certain services from his employees.

If A has a promissory note from B, he has a property right against B; that is, the right to receive a certain sum of money at a certain time. In fact there is scarcely any one who does not owe some service to somebody.

**Division of property.** — The property right to an article of wealth is often divided between two or more owners. In one of the examples above, the property right to the house and lot was divided between the owner and the tenant. When a farm is mortgaged, the property is divided between the owner and the mortgagee. The right of way is another case of division of property. In each of these cases the person usually thought of as the owner does not have the complete property. He does not have the right to all the uses of his wealth. Certain uses have been given up to others. That is, the property rights have been divided. Property rights may be divided in other ways. Two boys own a canoe in partnership. The right to the income or services of the canoe belongs equally to the two owners. In the same way, two men enter into a business partnership, which means that the property in the wealth of the business belongs to them both. The wealth belonging to a great corporation is represented by property which may be divided among thousands of separate stockholders. Each stockholder has a piece of paper, called a stock certificate, which certifies to his share in the property right to the corporation's wealth.

**Property and wealth.** — Property and wealth (or free persons) always go together. For every article of wealth there must be somewhere an owner or owners who have the property right to its income. On the other hand, wherever we find a property right there must be somewhere back of it an article of wealth or a free person. And when the property right to an article of wealth is

divided among two or more owners, the sum of the properties of the several owners will be equal to the complete property right in that article of wealth.

Care must be taken to avoid confusing wealth and property. In common language this is not always done. For example, we sometimes hear a house and lot called "property." Such careless use of terms will not do in the scientific study of economics. It will be easy to avoid errors if we always remember that wealth is a *material* thing, whereas property is the right to the services of wealth or of free persons and is *immaterial*.

**Documents in evidence of property.** — Sometimes property rights are expressed in legal documents. The owner of a farm or a building lot has a piece of paper called a *deed*, which is a legal statement of his property right to all the benefits of that land. When one pays to see a ball game he receives a ticket as evidence of his right. But this is not always the case. Very often there is no document showing the property right. A man has the property right to the clothes which he wears, but he seldom holds any document to prove it. The property right is there, however, whether it is indicated by a legal document or not.

**Government property.** — Many articles of wealth belong to the government. The city hall belongs to the city, and the property right to it is divided among all the citizens. The state capitol building is an article of wealth, the property right to which is in the hands of all the citizens of the state. The Congressional Library at Washington, the battleships in the American navy, the post office buildings scattered all over the country, are articles of wealth belonging to the United States.

**Wealth and property again.** — The most important

thing about wealth is that it is a *source* of income. Property, on the other hand, is the *distributor* of income. The property rights of the different members of society tell the extent to which each person may enjoy the services of wealth or of other persons. Property rights may be changed without changing the amount of wealth. The material welfare of the human race depends, first, on the amount of wealth there is and, second, on the way in which the property rights to this wealth are distributed among individuals, families, and nations.

### EXERCISES

1. Name ten articles of wealth and the service or services rendered by each.
2. Name some disservice of each of the ten articles.
3. Name an article whose costs are greater than its services. Is this article wealth? Why?
4. Give a list of useful, material things that are not owned by any one, and explain why each one is not owned.
5. State the difference between wealth and property.
6. Give three examples of wealth, the property right to which is divided among two or more persons.
7. Name the article of wealth of each of these property rights: (1) a theater ticket, (2) the half interest of a partner in a business, (3) the rights of a member of a boy's baseball club, (4) a railroad ticket, (5) the lease held by a man living in a rented house.
8. In which of the examples in Question 7 is there a document giving evidence of the property right? Explain the difference between the document and the right itself.
9. In which of the examples in Question 7 is there a property right in persons as well as a property right to wealth? Explain.

References for further study. — Fisher, I., *Elementary Principles of Economics* (1912), pages 23-39; 60-64. Ely, R. T., *Outlines of Economics*, Third Revised Edition (1916), page 105. Fetter, F. A., *Economic Principles* (1916), pages 264-266. Seligman, E. R. A., *Principles of Economics* (1905), pages 19-20. Turner, J. R., *Introduction to Economics* (1919), pages 84-85.

## CHAPTER IV

### THE MEASUREMENT OF WEALTH, INCOME, AND PROPERTY

**Unit of measure of wealth.** — We cannot go very far in the science of economics until we learn how to measure the things we are studying, particularly wealth, income, and property. We measure anything in order to tell how much of it there is, or how many there are. The first thing necessary in measuring anything is a *unit of measure*; that is, *a certain quantity of the particular thing, by which to measure all amounts*. Each kind of wealth generally has its appropriate unit of measure. Thus, the unit for measuring wheat is the bushel. The unit of butter is the pound; of milk, the quart; of cloth, the yard; of land, the acre, etc. Sometimes we may use different units for measuring the same kind of wealth. We may measure wheat in bushels, or pecks, or carloads; we may measure potatoes in bushels, or pounds; we measure land in acres, or square miles, or front feet, etc.

**Applying the unit.** — The next step is to find how many times the unit of measure is contained in the particular quantity of wealth to be measured. Suppose you are asked, "How much corn is there in a certain bin?" You first decide upon the bushel as the unit of measure and next find out how many bushels of corn are in the bin. You announce the result thus: "That bin contains 123 bushels of corn." We can easily think of other examples of the measurement of wealth; a herd of 1,000 cattle, a



stock of 40,000 feet of lumber, 100 yards of woolen cloth, 50 bales of cotton, etc.

**Measuring income.** — We also measure income, or the services or benefits of wealth. The method is exactly the same, though the units may be different. We measure the services of a plow horse by the number of days' work he performs. The services of a sawmill are measured by the number of feet of lumber turned out. The services of an orchard are measured by the number of bushels of peaches or other fruit produced. A house-painter's services are measured by the number of hours he works or the amount of surface he paints. The unit for measuring income or services is generally either an hour's work or a day's work or else the unit of the kind of wealth produced. Thus the unit for measuring the painter's service is the hour's work, while the unit for measuring the income from the orchard is the bushel of peaches.

**Measuring property.** — Property is measured in the same manner as wealth and income. The units are simply the units of the wealth or services to which the property is the right. If a man owns ten acres of land, we measure his property in the land by simply measuring the land. If he has the right to cut timber on 50 acres of land for 15 years, we measure his property by measuring the land and the time for which he has that particular right to it; that is, his property is the right to cut timber on 50 acres of land for 15 years. A tenant's property is measured by the number of years he has the right to use the house. We shall study later the measurement of the more complicated property rights, such as bonds and stocks.

**Wealth and income: fund and flow.** — There is one important difference between the measurement of wealth and the measurement of income. When we measure

wealth, we find out how much there is at a certain time; we measure a *stock of wealth at a certain time*. *Income is a flow of services during a certain period of time*. We do not think of income at one instant of time. It would be foolish to ask a farmer what was the yield of his orchard at 10:15 A.M. on October 3. We cannot measure an orchard's yield without stating a period of time. Thus we say the orchard yielded 400 bushels of peaches during the month of August, or 800 bushels during the year 1920, or 3,000 bushels during the four years 1917-1920. A bricklayer lays so many bricks *a day* or works so many hours *a day*. A sawmill turns out so many feet of lumber *an hour* or *a day* or *a week*. An irrigation system gives so many cubic feet of water *per hour*.

**Importance of the unit of value.** — Wealth, income, and property, we have seen, are measured, each in its appropriate units. But there is one unit in which all kinds of wealth, income, and property are measured and which is the most important of all units in economics and business. This is the unit of price or value. In the world to-day almost everything we have was bought from somebody else. Almost every business man is engaged in buying and selling wealth, income, and services. And there is not a single kind of wealth, property, income, or services that may not be bought and sold. We always need to know about anything: "What is it worth?" To answer this question we must find its price or value; that is, we measure it in units of price or value. We measure land in acres, wheat in bushels, cloth in yards. We cannot possibly measure land in bushels, or wheat by the yard. But we can measure them all in units of value. We can say \$10,000 worth of land, \$1,000 worth of wheat, \$500 worth of cloth. This is the

most important way of measuring wealth, and we must therefore learn exactly what is meant by price and value and how to measure the price and value of wealth, property, and income. To understand this we must first learn about the transfer and exchange of wealth.

**Transfer.** — *A transfer is a change of ownership of wealth.* If John gives his pocketknife to Henry, that is a transfer. The knife is wealth. It used to belong to John. Now it belongs to Henry. John was the owner. Now Henry is the owner. The ownership of wealth has changed, and so we have a transfer. Whenever wealth is bought and sold or given away, transfer takes place.

**Exchange.** — Suppose John gives his knife to Henry in return for a baseball which Henry gives to John. Boys would call this "swapping." Business men call it an *exchange*. To understand exactly what an exchange is, notice first that there are two transfers; the ownership of the knife changes from John to Henry; the ownership of the baseball changes from Henry to John. But why did John give up his knife to Henry? Because he was to receive Henry's baseball in its place. And Henry gave up his baseball because he would get the knife. In such a case we say each transfer is "in consideration of the other." When John simply gave his knife to Henry, there was one transfer, but no exchange, because he got nothing from Henry "in consideration of" the transfer of his knife. A gift is not an exchange. Finally notice that an exchange must be "voluntary"; that is, both owners must make the transfer willingly.

We are now able to define exchange, as follows: *An exchange is a pair of voluntary transfers between two owners, when each transfer is made in consideration of the other.*

**Barter.** — *Exchanges made without the use of money are called barter.* The exchange between John and Henry which we have just studied is a good example of barter. "Swapping" is the same as barter. There was probably once a time among savage peoples when barter was the regular kind of exchange. And there is always some barter going on among modern civilized people. For example, a man may trade his horse and carriage for an automobile, or a farmer may exchange his farm for a store and stock of goods in a town. But nearly all exchanges are now made by means of money, and these are the exchanges which it is important for us to study.

**Money exchange.** — In a later chapter we shall study more fully the subject of money. For the present it is enough to know that *money consists of articles of wealth and property rights which are generally accepted in exchange for other wealth and services.* In the United States, as every one knows, our money consists of gold and silver coins, "paper money," and small change coins of nickel and copper. The *unit* of our money is the dollar. In modern business, exchanges are made by means of money. *In money exchanges one of the transfers is a transfer of money.* Suppose Mr. Brown sells his house to Mr. Jones for \$4,000. The ownership of the house is transferred from Mr. Brown to Mr. Jones, while the ownership of the \$4,000 is transferred from Mr. Jones to Mr. Brown. We call this exchange either a *sale* or a *purchase*, according as we are thinking of the seller or the buyer.

**Value.** — We can now understand *value*. Value is the result of exchange, and we define *the value of anything as the quantity of any other thing that would be given in exchange for the first thing.* If a horse and carriage are exchanged for twenty tons of coal, the value of the horse and carriage is twenty tons of coal and the

value of twenty tons of coal is the horse and carriage. So when Mr. Brown sells his house to Mr. Jones for \$4,000, the value of the house is \$4,000 and the value of the \$4,000 is Mr. Brown's house. We do not often have occasion to speak of the value of money in this way. The value of money will be taken up in a later chapter (Chapter XXVIII). On the other hand, the values of all other things are usually expressed in terms of money. This is because nearly all exchanges are money exchanges.

**Price.** — *The price of anything is the amount of money that will be given in exchange for one unit of it.* For example, if a bushel of wheat will exchange for \$2.25, then the price of wheat is \$2.25 per bushel. Notice that before we can have a price we must decide upon a *unit of measure*. Whenever we speak of a price we must state or understand the exact unit which we are using.

**Value and price.** — Value and price are closely related to each other. Both are the result of exchange. The differences between them are (1) that value may be expressed in terms of any kind of wealth, property, or service, while the price of anything is always expressed in money, and (2) there can be a value for any quantity of a commodity, whereas price relates only to one unit. Thus we may speak of the value of one bushel of wheat or the value of 1,000 bushels. We could not speak of the price of 1,000 bushels of wheat. When value is expressed in money, the value of one unit of anything is, of course, the same as the price. If a farm sells for \$10,000, we may say the value of that farm is \$10,000, or we may say its price is \$10,000. It makes no difference which term we use, so long as we are talking about just one article. But we should not say the price of 10 dozen eggs is \$7.00. We should say the value is \$7.00, because

the price is 70 cents a dozen, the dozen being the unit in which we generally measure eggs.

**The unit of price or value.** — It is now clear that by finding their values in terms of money, we can measure all kinds of wealth, property, and income, in the same unit; namely, the *unit of money value*. *The unit of money value is simply the value of the monetary unit*; in the United States, it is the "dollar's worth," or simply the dollar. Since value is almost always measured in money, we generally call the dollar the *unit of value*, not taking the trouble always to say "money value."

### EXERCISES

1. Name the units in which the following things are commonly measured: (1) land, (2) apples, (3) eggs, (4) houses, (5) coal, (6) lumber, (7) firewood, (8) sugar, (9) plowing, (10) wall paper, (11) carpets, (12) farm labor, (13) sawing wood.

2. Give an example of the measurement (1) of wealth, (2) of property, (3) of income.

3. Is there one unit in which all of the articles in Question 1 could be measured? Explain.

4. Give five examples of transfer (not exchange).

5. Give five examples of exchange (without money).

6. Explain the difference between a transfer and an exchange.

7. Give five examples of money exchange.

8. What is the difference between price and value? Give an example in which the price and the value are the same.

9. State and explain the steps by which the value of a carload of coal would be determined. Give another example.

10. Why is it not correct to say, "A glass of drinking water has great value"? What term studied in Chapter II is here confused with value?

**References for further study.** — Secrist, H., *An Introduction to Statistical Methods* (1917), pages 59-77. Fisher, I., *Elementary Principles of Economics* (1912), pages 11-22. Van Tuyl, G. H., *Complete Business Arithmetic* (1915), pages 182-205. Clay, H., *Economics for the General Reader*, American Edition (1918), pages 391-393.

## CHAPTER V

### ACCOUNTS

Business men and others have to keep accurate *accounts* of their wealth, property, and income. There are two principal kinds of accounts, *property accounts* and *income accounts*.

**Example and definition of assets.** — Let us take an example of a property account. Suppose you should ask a coal dealer in your town what his “assets” are. He might give you a list something like this:

#### ASSETS OF S. A. THOMPSON, COAL DEALER, SEPTEMBER 1, 1922

##### (1) *Personal assets*

Dwelling house and lot in town of H.....	\$15,000	
Furniture, clothing, etc.....	<u>3,000</u>	
Total personal assets.....		\$18,000

##### (2) *Business assets*

Coal yard, $\frac{1}{2}$ acre in town of H.....	2,000	
Office building and coal sheds.....	6,000	
Office furniture.....	500	
500 tons soft coal at \$6.00 a ton.....	3,000	
700 “ hard coal at \$10.00 a ton.....	7,000	
2 automobile trucks at \$2,500.....	5,000	
4 horses at \$250.....	1,000	
3 wagons at \$150.....	450	
Cash on hand.....	200	
Deposits in bank.....	5,500	
Accounts receivable.....	<u>800</u>	
Total business assets.....		<u>31,450</u>
Total assets.....		<u><u>\$49,450</u></u>

*A person's assets consist of his wealth and his property rights against other free persons and their wealth.* It will be noted that some of the items in the list (p. 34) are articles of wealth which Mr. Thompson owns. The last two items, however, are not wealth, but property rights, the right to money due from the bank and rights to money due from various customers. Since Mr. Thompson of course has property rights to his own wealth, we may, if we wish, call all of the items in this list property by simply understanding such terms as "dwelling house," "furniture," etc., to stand for the owner's *property* in his own articles of wealth.

**Assets relate to a particular time.** — This example will also illustrate the fact that whenever we speak of anybody's assets or property, we must have in mind a particular instant of time. It would be foolish to ask the coal dealer what his assets were during a period of time, say the month of Spetember. He would tell you that they were different on different days or even different hours in the day. On September 1 they were as shown in the list already given. But the very next day they were different: some coal was sold, some cash was received, he bought another truck, took some money out of the bank, etc. The list of anybody's assets is likely to change from day to day, and any property account must therefore refer to a particular time. Men often find it necessary to state exactly the hour and minute to which their property accounts refer, since changes may take place during the same day. You will notice bank statements printed in the newspapers, giving the account "as of 10 A.M." or "at the close of business" on a certain date.

**Liabilities.** — But a list of assets does not make a complete property account. A person's property account must also show all *the property rights of others against*



*him and his wealth.* We call such rights *liabilities*. Liabilities are the opposite of assets. They are sometimes called *debts*. Mr. Thompson, the coal dealer, may have had the following liabilities on September 1, 1922: he owed a wholesale coal dealer \$500 for coal, he owed various stores for goods bought on account \$200, his house was mortgaged to Mr. Brown for \$400, and he owed the bank \$800. The liability side of his account would contain these items:

LIABILITIES OF S. A. THOMPSON, COAL DEALER, SEPTEMBER 1, 1922

(1) *Personal liabilities*

Accounts payable.....	\$200
Mortgage payable on house to W. Brown.....	<u>400</u>
Total personal liabilities.....	\$ 600

(2) *Business liabilities*

Note payable to bank.....	800
Due to Amos Green, wholesale coal dealer.....	<u>500</u>
Total business liabilities.....	<u>1,300</u>
Total liabilities.....	<u>\$1,900</u>

Of course liabilities must be stated as of a particular time, as in the case of assets. They also are likely to change from day to day. The wholesaler's bill may be paid, the mortgage may be partly paid, the loan from the bank may be increased or decreased.

If we put together in one account the statement of Mr. Thompson's assets and liabilities, we shall have his complete property account, or "balance sheet," as shown at the top of the next page.

The "balance." — Note on the liability side the item: "Balance, 47,550." This needs some explanation. The total assets are \$49,450; the liabilities, \$1,900. Subtracting the liabilities from the assets leaves a difference, or "balance," of \$47,550. This balance added to the liabilities makes a sum equal to the sum of the assets.

PROPERTY ACCOUNT OR BALANCE SHEET OF S. A. THOMPSON,  
COAL DEALER, SEPTEMBER 1, 1922

ASSETS		LIABILITIES	
(1) <i>Personal</i>		(1) <i>Personal</i>	
Dwelling house and lot..	\$15,000	Accounts payable.....	\$ 200
Furniture, clothing, etc...	3,000	Mortgage payable on	
		house to W. Brown...	400
(2) <i>Business</i>		(2) <i>Business</i>	
Coal yard, $\frac{1}{2}$ acre.....	2,000	Note payable to bank....	800
Office buildings and coal		Due to Amos Green for	
sheds.....	6,000	coal.....	500
Office furniture.....	500	Balance.....	47,550
500 tons soft coal.....	3,000		
700 " hard coal.....	7,000		
2 automobile trucks....	5,000		
4 horses.....	1,000		
3 wagons.....	450		
Cash on hand.....	200		
Deposits in bank.....	5,500		
Accounts receivable....	800		
	<u>\$49,450</u>		<u>\$49,450</u>

It is in this way that business men always make the totals the same on the two sides of a property account.

**Net assets and net liabilities.** — Since the balance in the above account is *the difference between the assets and the liabilities*, it is called the *net assets* or *net property* or *net worth*. Mr. Thompson has property amounting to \$49,450. But he owes to others \$1,900. The difference between his property and his debts (his assets and his liabilities) is his net property or his net assets. As business men would say, Mr. Thompson "is worth \$47,550."

On the other hand, if the liabilities in a property account are greater than the assets, then the balance will be on the assets side, and will represent *net liabilities* or *net debts*, or *deficit*; that is, *the difference between the liabilities and the assets*.

**Definition of property account.** — We can now construct the following definition: *A property account, or balance sheet, is a statement showing, in one column, all a person's assets, with the value of each item, and, in another column, all his liabilities, with the value of each item, and showing also the total assets, the total liabilities, and the balance, all as of a certain instant of time.*

**Every liability is an asset to some other person.** — Every liability item on any person's property account is an asset to some other person. This is clear, because we have already learned that a person's liabilities are the property rights of others against him. They are therefore assets of those other persons. For example, on Mr. Thompson's property account we found a liability, "Due to Amos Green for coal, \$500." If we should look up Mr. Green's property account on the same date, we should find among his assets this item: "Due from S. A. Thompson, \$500." Another of Mr. Thompson's liabilities is "Mortgage payable on house to W. Brown, \$400." Mr. Brown's account for this date would have an asset item reading, "Mortgage receivable on S. A. Thompson's house, \$400."

**Income accounts.** — An *income account* may be kept, showing the income and the costs of any article of wealth. Like the property account, it has two sides. Unlike the property account, it relates to a certain *period of time* instead of a certain *instant of time*: for example, a certain year or month or week, not a certain date. *The income account of any article of wealth is a statement showing on one side all the services of that article of wealth during a certain period of time, with the value of each item, and on the other side all its costs during the same period, with the value of each, and showing also the total income, the total costs, and the balance.*

The one side we call the income side; the other side is the cost, or outgo, side.

For example the income account of an orchard might read like this:

INCOME ACCOUNT OF ORCHARD, YEAR ENDING NOVEMBER 1, 1920

<i>Costs</i>		<i>Income</i>	
Wages of laborers picking fruit, etc.....	\$ 2,000	5,000 bu. apples at \$2.00.	\$10,000
Cost of new trees replacing old. ....	500	1,000 bu. peaches at \$3.00	3,000
Spraying, fertilizer, etc...	300	500 qts. cherries at 25c.	125
Cost of packing fruit....	750	4 cords fire wood at \$10.00.....	40
Taxes.....	500		
Balance.....	9,115		
	<u>\$13,165</u>		<u>\$13,165</u>

**Gross and net income.** — We have a “balance,” just as we did in the property account, and we find it in exactly the same way. If the total income is greater than the total costs, we find the difference and put the balancing item on the cost side of the account. This makes the total the same on both sides. *The total income is called the gross income.* The balance is the *net income, or the difference between the total, or gross, income and the total cost.* In this example, the orchard yielded during the year ending November 1, 1920, a gross income of \$13,165; its total costs were \$4,050; and its net income was \$9,115.

**Gross and net costs.** — Sometimes costs are greater than income. Then the balance will be written on the income side of the account and will be found by subtracting the total income from the total costs. When costs are greater than income, the balance is called the *net loss.*

**Combined income account of a person.** — If a person should make out an income account for each article of wealth to which he has a property right and for each person who gave him services and then combine them into one account he would have his combined income account. It would show all the services he had received from wealth and from persons, such as the shelter from his dwelling house, the services of his clothes, his automobile, etc., his salary or wages or the income from his business, interest on his investments, gifts and inheritances, etc. On the other side it would show all the costs necessary to get these services, such as insurance and taxes on his house, cost of clothing, repairs on his automobile, costs of his business, interest on his debts, wages of servants, etc. These are only a very few of the hundreds of items that such an account would show. In fact, people almost never keep such complete income accounts as this. Such things as the shelter of a dwelling house, the pleasure trips of an automobile, etc., are seldom put in the account. Most income accounts show only items for which money was received or paid; that is, money income and money costs. The following is an example of an ordinary income account:

INCOME ACCOUNT OF J. I. FISKE, MONTH OF OCTOBER, 1928

<i>Costs</i>		<i>Income</i>	
Food.....	\$ 40.00	Salary (or wages).....	\$250.00
Clothing.....	60.00	Interest on bonds.....	50.00
Taxes.....	10.00		
Wages of servant.....	25.00		
Coal.....	20.00		
Miscellaneous.....	75.00		
Balance.....	70.00		
	<u>\$300.00</u>		<u>\$300.00</u>

We use the term "miscellaneous" to lump together a

great many small items which we do not care to put in separately. The balance of \$70 is the net income and shows that Mr. Fiske spent only \$230 of his \$300 income and so saved \$70 this month. Some other month the balance might be on the other side, showing costs, or expenses, greater than his income.

### EXERCISES

1. Mr. A on September 15, 1922, owned a farm worth \$15,000, 50 cows worth \$200 each, 4 horses worth \$300 each, a house worth \$3,000, barns and other buildings worth \$2,500, machinery and tools worth \$1,500. He owned \$500 in Liberty Bonds, and had \$300 on deposit in the bank. All his other property together was worth \$350. He owed Mr. B \$2,000 on account of a mortgage on his farm, and he owed \$200 at the store where he trades. Make out Mr. A's property account on this date.

2. Make out an assumed property account of a garage owner in a small city.

3. Which of the items in Question 1 would appear on some other person's property account? Explain.

4. Mr. B, during October, 1922, received a salary of \$350, interest on his mortgage on Mr. A's farm of \$50, and a bequest from a relative of \$1,500. His expenses were: food, \$60; clothing, \$150; taxes, \$10; house rent, \$40; contribution to the church, \$25; amusements, \$15; and all other expenditures, \$65. Make out his income account.

5. Make out what you would consider a probable income account for the farmer, Mr. A (whose property account was given in Question 1) for the month of October, 1922.

References for further study. — Rittenhouse, C. F., *New Modern Illustrative Bookkeeping, Introductory Course* (1918), pages 50-53. Fisher, I., *Elementary Principles of Economics* (1912), pages 39-59; 64-101.

## PART II. THE ECONOMIC ORGANIZATION FOR PRODUCTION

### CHAPTER VI

#### THE ECONOMIC ENVIRONMENT

**The world we live in.** — We have learned what wealth is. We have learned that the principal activity of man is concerned with securing the wealth necessary for the satisfaction of his many and various wants or, in other words, with “making his living.” The main purpose of economics is to throw light upon these activities of man. As the first step we must now learn something about the world in which man lives and the conditions that surround him in his continued struggle for the satisfaction of his wants. We call all these conditions the *economic environment*.

**The natural environment.** — We live upon the outside of a great ball that we call the earth. On its surface are lands, covered with forests and fields, and water in the form of oceans, lakes, and rivers. Both land and water abound in plant and animal life. Below the earth’s surface are quantities of coal and iron, oil and other minerals. Above, the earth is surrounded by the air, in which float clouds giving moisture to the land. And far away are other planets, the sun giving light and heat to the earth, and countless other worlds of which we know comparatively little. This is where man lives. It is called *nature*, or the *natural environment*.

Everything that man has comes originally from nature,

and all man's efforts to satisfy his wants are controlled and modified by the character of the natural world in which he lives. Nature furnishes some things freely and in abundance, as air and water. Other things are given us only in small quantities, such as diamonds, platinum, etc. Nature's bounty is different in different parts of the world. Near the equator, nature furnishes light and heat in abundance, even in excess. In the polar regions, nature is stingy in her gifts of light and heat. Man is strictly dependent on climate. He must adapt his clothing and his houses to the climate, the scorching heat of the torrid zone, the freezing cold of the arctic winters, or the moderate but variable climate of the temperate zones. Climate determines what man can get from nature. He can raise wheat easily in the north central states of the United States and in parts of Canada, Russia, and Argentina. In these regions he cannot raise cotton or oranges. These are easily produced in the different climate of other parts of the world.

These are just a few examples of the countless ways in which nature controls man's effort to make his living. If he is to be successful, man must learn nature's laws and conform to them. It is like "knowing the rules of the game." The principal reason why modern, civilized man is able to satisfy his wants so lavishly as compared with the savages is that he has learned to act in harmony with his natural environment.

**The social environment.** — But in addition to the natural environment, man's efforts to make his living are controlled by other conditions devised by man himself. These conditions we call the *artificial environment* or the *social environment*. Let us see what these conditions are.

**Personal freedom.** — First and most important is



*personal freedom.* We are likely to take this as a matter of course. But it is really a very remarkable human institution. There was a long period in the history of the world when freedom was a rare thing, enjoyed only by a favored few. The masses of the people were slaves or serfs, subject to the orders of a few owners and masters. Universal freedom is a fairly modern thing. To-day human beings are not owned. Each is "his own master." We determine our conduct according to our own will. It is true that there are some restrictions upon individual freedom. Restrictions are necessary in order that the rights and liberties of others be protected. But this is a very different thing from slavery. Personal freedom is the rule to-day.

**Private property.** — Next we notice the institution of *private property*. In studying the meaning of property (Chapter III), we took private property for granted. But this also is a remarkable institution, and a fairly modern one. In the early days of the human race it is probable that there was not much private property. Most of the wealth of the tribe was owned in common; that is, it belonged to the whole tribe, not to individual members. Later much of the wealth was the property of the king or chief. In the feudal system of Europe, the bulk of the wealth, especially the land, belonged to the king or other ruler. Even to-day there are communities here and there in which the wealth is owned in common. The people called socialists do not think highly of the institution of private property and would prefer to have many kinds of wealth owned in common. Of course, some wealth is owned by the people in common, i.e., by their governments; for example, government buildings, post offices, schoolhouses, battle-ships, parks, bridges, roads, etc. But almost all of the

wealth throughout the civilized world is privately owned by individual men and women or by corporations. Private property is the rule.

**Free use of wealth.** — Private property implies the right of *free use of one's own wealth*. The use and disposal of wealth are not directed by the king or ruler, or by laws of the government. Each owner employs his wealth as he sees fit. And so all the community's wealth is used according to the wishes, not of the ruler or of the government, but of the several individual owners, each acting on his own initiative. Here also, as in the case of personal liberty, there are some restrictions, necessary in order that the individual, in the use of his own wealth, shall not interfere with the rights of others to freedom and the free use of their wealth.

**Individual initiative and control of enterprise.** — Another condition of the social environment is the natural result of those that have been named. This is *individual initiative and control of enterprise*. We have noted that most of man's activities are devoted to the business of making his living. In this endeavor, man has built up great industrial enterprises, farming, forestry, mining, manufacturing, transportation, wholesale and retail trade, banking, and so on. Later we shall study these great enterprises, which make up the world of business. The important fact to notice now is that all this variety of enterprise is directed and controlled mainly by the free will of individual men. Who decides whether the farms of a state in the middle west shall be devoted to raising wheat or corn or sugar beets? Not the governor nor the state legislature nor even the vote of the farmers. Each individual farmer decides it for his own farm. Who decides how much fir lumber shall be taken next year from the forests of the northwestern states, or how much

land in the south shall be planted with cotton? The answer is, the individual owners or operators. Individual managers direct the building and operation of the railroads. Individual manufacturers decide what kind and quantity of cotton cloth shall be made, and so on. This was different in former days, when the ruler allotted to each man his task. It would be different in a socialistic state, where industry would be controlled by the government and each individual told what to do.

**The government.** — Finally we must notice, among the conditions of our social environment, *the government*. The government limits man's activities in various ways. Here are some of the more important functions of government.

(1) *Defense.* — The government defends us from attack by outside foes. This is the business of the army and the navy. It enables us to go about our daily business with a feeling of security and without having to take our own time for defense.

(2) *Maintaining law and order.* — The government guarantees and enforces the rights of personal freedom and private property which we have just studied. Without the presence of government, each man would have to fight for his rights, and the strong would often make slaves of the weak and seize their wealth by force. Now, if any one attempts to enter a house against the owner's will or seize his wealth, the police and courts will protect the owner's rights. Thus, we say the government "maintains law and order."

(3) *Restrictions on individual freedom.* — We have seen that, in order that we may all enjoy the rights of freedom and private property, each one's rights must be somewhat restricted. It is the business of the government to impose and enforce these restrictions. For exam-

ple, the owner of an automobile has the right to own his automobile and use it as he pleases. But the government finds it necessary to restrict his right by saying that, in meeting other vehicles, he shall drive only on the right-hand side of the road. Otherwise, he would interfere with the rights of other users of the highway. Again, every one has the right of personal freedom. But the government restricts this right by forbidding any one to trespass on another's land. The power by which governments thus restrict the freedom of the individual citizens is called the *police power*. In time of war the government may draft citizens into the army and force them to work and fight under orders, thus taking away entirely their personal freedom.

(4) *Eminent domain*. — Under certain circumstances the government may thrust aside the right of private property. Suppose certain land is needed for a camp in time of war. The government will take it regardless of the protests of its owner. Horses, cattle, and any other kind of wealth may thus be taken by the government if public necessity requires. When a railroad is being built, the government gives the railroad company the right to take the necessary land even against the will of its owner. In all such cases the owner is paid a fair price for the property taken. Whenever private property is needed for a public use, the right of private property has to give way. This power of the government is called the right of *eminent domain*. We shall learn more about its use in railroad building when we come to the chapter on transportation and the railroads (Chapter XXXI).

(5) *Enforcement of contracts*. — The government enforces contracts. Men and women, in the exercise of their freedom, may make agreements with each other, promising to do or not to do certain things. Such agree-

ments are called *contracts*. Having made a lawful contract, each party must keep his agreement. If he refuses, the other party may call upon the government to compel him to live up to his agreement or to make good the loss resulting from his failure. Contracts are very important in business, and the business world is continually dependent upon the government to enforce them.

These are by no means all the things the government does, but they are its most important functions as regards the economic activities of the citizens.

**Government in the United States.** — In the United States we have three principal *grades of government*.

(1) *Federal government*. — The United States is what is called a federation; i.e., a union of several separate states. So we have the *United States government*, called also the *federal government* or the *national government*. The powers and duties of the federal government are those which are stated in the Constitution of the United States or can be inferred from those so stated.

(2) *State government*. — There are the governments of the forty-eight separate *states*. These are the thirteen states which came together and formed the original federation plus those that have been added later. Each state has its own constitution. In general the states have all the powers and duties of government which are not given over to the federal government in the Constitution of the United States.

(3) *Local government*. — Within each state are a number of *local governments* — counties, towns, townships, cities, boroughs, school districts, etc. These local governments were created by the state and they have only such powers and duties as are given them by the state.

The economic activities of the various grades of government will be more thoroughly discussed later in this book.

**Summary: "The rules of the game."** — We see, then, that man's activities in making his living are carried on under conditions which are called his *economic environment*, and this economic environment is subdivided into the *natural environment* and the *social environment*. These conditions are the "rules of the game" under which man's economic life is conducted. Some of the rules are imposed upon him by nature, while others he deliberately imposes upon himself. The rules are like those of a yacht race. The skippers are subject to two sets of conditions. One set, consisting of the conditions of wind and tide and weather, is imposed by nature. The other consists of the rules of the race, as to the course, time limits, measurements of hull and sail area, etc., laid down by the racers themselves or by the racing clubs. The successful skipper is the one who knows how to sail in accordance with both the natural and the artificial rules of the game.

**Environment subject to change.** — The economic environment is not the same in all parts of the world, and it has not always been what it is to-day. Natural conditions change slowly, through what we call the process of *evolution*, and our social environment is also subject to change or evolution. This chapter has described the social environment as it prevails in most of the civilized countries of America and Europe at the present time, with special reference to the United States. There is no reason to believe that the end of evolution has been reached either in the social or in the natural environment. The future will undoubtedly bring changes. Such changes, however, generally come gradually. Evolution, rather than revolution, is the rule of the economic environment.

**Man is a social being.** — It must always be remembered that man is a *social being*. Every human being lives his life in association with other people. Nobody

can live entirely to himself. Robinson Crusoe is portrayed as a man who lived a solitary life, without associating with any other human being. The remarkable point to this story is that Crusoe's life was so different from our own lives, and even in this imaginary tale it was found advisable to liven up the story by introducing the "good man, Friday."

"**Society.**" — Our lives touch those of others in countless ways, in the family, in business, in the church, in school, in recreation, and in all sorts of clubs, societies, and associations. All the citizens are united through the government, town, county, state, and nation. And even the different nations do not lead separate careers, but are joined together by treaties and come into contact with one another in many ways.

In all our daily actions we must remember our relations to other people. None of us is free to act exactly as he pleases. There are some things we cannot do because the law forbids them. Our freedom is still more restricted by what we call *custom*. A boy who walked through the city street in the middle of winter wearing white flannel trousers would suffer more from the ridicule of his friends and neighbors than he would from the cold. Our behavior in the classroom, in a business office, on the street, on the athletic field, at a dance, or at the theater, is all regulated by the force of custom, which means that we do not live separate lives, but are part of the great organization of people which we call *society*. This is what we mean when we say that man is a social being. When one compares Robinson Crusoe's existence, in the freedom of his solitary life on his island, with the complex relations of our modern society, it is easy to realize how important our social life is.

**Social character of wealth.** — The relation of man to

other men is especially important when we come to his dealings with wealth. All our enjoyment of wealth depends on other people. Children could not live and grow up were it not for the labor and care of their parents in providing wealth to satisfy their wants. As the children grow they often go to work themselves and furnish wealth which pays back to the parents some part of the debt. Every person depends on others for most of the wealth which he uses to satisfy his wants. The houses we live in were not built by us but by others — carpenters and masons, tinsmiths, painters, paper hangers, and so on. The coal that heats our homes and cooks our food was produced by miners in distant places, and brought to us by railroad workers and truckmen. The food that we eat is furnished us through the labor of many other persons — farmers, butchers, bakers, manufacturers, and storekeepers.

One part of the country depends largely on other parts of the country. The farmers in the Mississippi valley raise wheat and corn and hogs and cattle to feed the people of New England. In return, the manufacturers of New England produce cloth to clothe the western farmers. Even the separate nations of the world are unable to supply all their own wants. Each nation produces things which it sends to supply the wants of other nations and in turn draws from the ends of the world certain articles of wealth which its citizens need. The whole world is bound together, in a most complex way, by trade and exchange of wealth.

**Economics a social science.** — Since economics treats of some of the important relations of men living together in society, it is called a *social science*. There would not be much to the science of economics if all men lived like Robinson Crusoe.



## EXERCISES

1. What is meant by man's *environment*? Explain the difference between the *natural* environment and the *social* environment.
2. Summarize the important features of the social environment.
3. State some of the ways in which your daily life and the lives of your parents would be different if there were not (1) personal freedom, (2) private property, (3) free use of wealth, (4) individual control of enterprise.
4. Summarize the important functions of government.
5. State some of the things which were done for you during the past week by (1) the United States government, (2) the government of your state, (3) the government of your city, town, or county.
6. State some of the things which each of these governments forbids you to do.
7. How would the daily lives of your parents be changed if there were no government?
8. What is custom? Name some of the things which you are compelled by custom to do and some of the things which you do not do because of custom.
9. What is meant by the saying, "Man is a social being"?

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## CHAPTER VII

### PRODUCTION

**How does man obtain wealth?** — We have learned that man devotes most of his energies to the task of making his living and that this task consists mainly in securing those articles of wealth that are able to satisfy his wants. We must now study more particularly about how wealth is secured. Where does all the wealth come from? Apparently any one who has the money can get any wealth that he needs to satisfy his wants. Why are the shops and markets stocked with so many kinds of wealth? How is it that no matter how much we buy, there always seems to be plenty more to take its place? To answer these questions we must learn about production.

**Production of wealth.** — What is production? Every one will agree that the creation of a new article of wealth is production. The farmer produces wheat or cotton. The manufacturer produces shoes. The carpenter produces a house. But how about the railroad that brings wheat from the western farms to New York? Is the transportation of wealth, as well as its creation, production? The answer to this question will appear if we ask what all wealth is for. The only reason for having wealth is that our wants may be satisfied. Wheat on the western farms cannot satisfy the hunger of people in New York. The work of transporting the wheat is just as important as that of raising it. The object of both is that hunger may be satisfied. Any activity that adds to the power of wealth to satisfy human wants (i.e. to its utility) is

production. We therefore say that the *production of wealth is the creation of utility*. When a manufacturer makes a horseshoe, he is producing wealth. But so is a blacksmith when he shoes a horse, for the horse is now better able to serve his owner than before, and the horseshoe was of no use till it was nailed to a horse's hoof. The blacksmith has created utility. The truckman who brings coal from the wharf or the railroad yard and puts it in the coal bin is a producer because he increases the utility of the coal. It would never have warmed the house if left in the freight car. The merchant who buys goods from the manufacturer and keeps them in a store conveniently arranged for the purchasers is increasing the utility of wealth by putting it in the hands of those whose wants are to be satisfied. Even the jobber or broker, who does nothing but buy goods, hold them, and then sell them to another dealer, is creating utility by holding the goods from a time when they are less needed till a time when they can be of greater service.

**Three kinds of utility.** — We see there are different kinds of utility. The three most important are called *form utility*, *place utility*, and *time utility*. Form utility is created by the manufacturer, when he changes the form of wealth in order to make it more useful; i.e., to add to its utility. The railroad workers, the sailors on ships, the truckmen are creators of place utility, when they bring wealth to the places where it can be of the most use. The merchants, the brokers, and even the speculators are creating time utilities by holding goods till the time when they will be needed. These persons are therefore all engaged in production.

**Another kind of production.** — There is, however, another kind of production. For example, an opera singer ordinarily produces no wealth; her efforts are made

to give pleasure or instruction directly. We have learned that what makes wealth worth having is that it furnishes services or benefits which satisfy human wants. When we desire to hear a song from an opera, we may either turn on a phonograph or go to hear a singer. The persons who made the phonograph produced an article of wealth that could satisfy the desire for music. The singer in the opera, instead of producing an article of wealth, satisfies this want directly. We conclude that all persons who perform services that satisfy human wants directly are engaged in production, just as truly as those whose efforts lead to creation of utility in wealth.

**Definition of production.** — The complete definition of production, then, is as follows: *Production consists of (1) the creation of utility in wealth (or the production of wealth) and (2) the performance, by free persons, of services that satisfy human wants directly.* Most of our study in the following chapters will be devoted to the first kind of production; i.e., the production of wealth.

**Man can produce nothing alone.** — A moment's thought will show that man alone can produce nothing. The farmer could not produce a single grain of wheat if the soil and the air and water did not furnish the materials and if all the forces of nature did not do their part. The factory could not turn out a single machine, if nature had not furnished coal and iron in the mines, timber in the forests, oil under the ground, and all the other materials that are used up on the finished product of the factory.

Secondly, man's effort in the production of wealth would be very feeble and would produce small results, if he had to work only with his bare hands. To make labor successful and productive, he must have tools and machinery. This is the great difference between savage people and modern civilized nations. The savage can

produce only a few rude necessities, because he works with almost nothing except his bare hands. On the other hand, to one who walks through a big factory, with long rows of whirring, noisy machines all about, with only an occasional workman here and there quietly attending to the machines, it seems almost as though the machinery were producing wealth of itself.

The three "factors of production." — Thus, three different "partners" are working together in the production of wealth — nature, man, and the tools and machinery which man uses to aid him. Economists call these partners *the three factors of production* and call them separately nature (or land), labor, and capital. We shall study each of these factors in turn, in order to understand what part each performs in production.

#### EXERCISES

1. What is *production*? What are the two kinds of production? Explain the difference between them. Give an example of each kind.
2. Explain (1) form utility, (2) place utility, (3) time utility. Give examples of the creation of each.
3. State whether each of the acts in the following list is or is not production, and give reasons: (1) a boy playing baseball, (2) the playing of a professional ball player, (3) the performance of a "movie" actress, (4) a man climbing Pikes Peak, (5) a drug store clerk serving soda water to customers, (6) a phonograph playing music.
4. What would be the effect on production if nature did not do her part? If man did nothing? If there were no capital?
5. Is a storekeeper a producer of wealth? Give reasons.
6. Is a traveling salesman a producer of wealth? Give reasons.

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## CHAPTER VIII

### NATURE'S SHARE IN PRODUCTION

Is nature a stingy partner? — As we learned in Chapter I, very few of the things man wants are given him freely by nature. It might appear, therefore, that nature is rather stingy in her treatment of the human race. Nevertheless, the fact is that nature is the original source of everything. Man works hard; but, as stated in Chapter VI, everything that he has to work upon comes from nature, and at every step in production he is dependent upon nature. In this chapter we shall study nature's part in production; and we shall find, perhaps, that nature is not so stingy after all.

**Nature furnishes the materials of wealth.** — Nature's first service to production is in furnishing all the materials of wealth. A complete list of these materials would fill this whole book. We can only name some of the most important groups. From the land come all sorts of plants, — grains, fruits, vegetables, sugar, cotton, etc., — from which man obtains food and makes clothing. The forests yield lumber, tar, rosin, firewood, and other products. The waters furnish fish. And from the ground come coal, iron, gold, silver, and other minerals, oil, and countless other materials necessary for the production of wealth. Animals and birds, both wild and "domestic," are an important gift of nature.

The things man uses may bear little resemblance to anything furnished by nature. But no matter how much

man may have changed and shaped the materials, everything that he had to work on came originally from nature. For example, consider the shoes you are wearing. They were bought from the storekeeper, and he bought them from the manufacturer, who made them. But the manufacturer could never have made the shoes if nature had not furnished cattle on the western ranches from which to get the leather. On southern plantations, nature produced cotton which men made into thread to sew the shoes and into laces for fastening them. In some iron mine, nature gave the metal for the eyelets. And this is not the end. Before the manufacturer could even begin making shoes he had to have a factory. For his factory he called upon nature to furnish wood from the forest, iron from the mines, bricks, stones, and cement from the earth, and many other materials. For the machinery in his factory, nature had to give more iron and copper and wood. To make the machinery go he had to call upon nature for coal from the mines, water from the streams, oil from far under the ground, and so on. All of this was necessary that men might be able to fashion this pair of shoes.

**Nature furnishes motive forces.** — Besides giving all the materials for wealth, nature helps man in the production of wealth by furnishing him with certain great *motive forces*. Suppose a man sets out to raise corn. He first clears the ground, removing stones and stumps and other obstructions. Then he must loosen up the ground by digging. After he has planted the seed, he must go over the ground to kill the weeds. At the proper time he must cut the corn, tear the husks from the ears, shell the corn from the cobs, and carry it to the barn where he keeps it, or to the market where he sells it.

**Animals.** — If man does all this himself it means

much hard labor. Merely digging up the ground takes so long that a man can cultivate only a very small field. But such slow, laborious work is not necessary. Nature is ready to furnish man with a motive force much stronger than his own body. So man soon learned to take the *animals*, horses, cattle, and others, and train and harness them. The farmer no longer digs up his field with the spade. With a pair of horses or a yoke of oxen to help him, he plows a field many times larger than he could dig up himself, and he does it much better. He also uses the strength of the animals to aid him to cultivate the field, to gather the harvest, to prepare it for market, and to carry it to the town. His power to produce wealth is thus increased many times over.

**Wind.** — The second great natural motive force is the *wind*. The first use that men learned to make of the force of wind was in driving their ships upon the sea. Before that they had used their own muscular force, just as the first farmer used his bodily strength to dig up his field. Men built small boats and propelled them with paddles or oars. Even the great Greek and Roman ships of war and commerce were propelled by many slaves chained to their seats and straining over their oars. All this was changed when men learned to build sailing ships and let nature propel them by the force of the wind. Then it became possible to construct great ships that made the old canoes and even the Greek and Roman triremes look like toy boats. These ships could cross the ocean and bring huge cargoes from distant ports, which never could have been done by the old method.

To-day we do not see many sailing ships, except pleasure boats, because man has learned to make use of a still greater force of nature, which we shall study soon.



But the wind is still used in many parts of the world to drive mills and pump water. Many a farm in the middle western states of America has its windmill pumping water from a well, sometimes from hundreds of feet below the ground. Every picture of the farming country of Holland shows the curious-shaped windmills which keep the land drained by pumping surface water into the canals.

**Water power.** — Another great force is that of *running or falling water*. Before men had learned how to use this force, they had to grind their grain for food by hand, slowly and laboriously pounding it with a stone beater in a stone dish. Thus the Indian women worked long hours to grind the corn for their food, perhaps sitting right beside a running stream which was ready all the time to do their work for them. To-day one may go into many cities and villages and find flour mills built along the banks of the rivers. A few men and women tend the machinery, whereas hundreds could not have done the work if they had had to use only their own strength.

**Steam.** — The greatest of all the natural motive forces which man has learned to use is that of *steam*. The discovery of how to harness this power and make it work by means of the steam engine was probably the greatest economic invention of the whole history of the world. The gigantic tasks which the steam engine easily performs made the results of the other motive forces — animals, wind, and water — look like child's play. The whole process of producing manufactured wealth, in fact, the whole economic history of the world, was changed by the steam engine. Where people had worked slowly in their homes or in little shops fashioning products by hand labor, great factories sprang up

employing thousands of men, women, and children. In place of a few articles of wealth, produced slowly and at great cost, thousands were turned out quickly and cheaply. Even the great mills run by water power were often displaced by factories whose machinery was driven by the steam engine. Factories no longer have to cluster along the banks of the streams. They may be built wherever their owners think best.

The steam engine has worked its greatest wonders in transportation, on land and sea. We have seen what a great thing was the discovery of how to use the wind to drive ships. But the steamship soon proved to be far superior to the sailing ship. The latter had to struggle against head winds, it was driven off its course by storms, or lay helpless in a calm. The steamship goes when and where it chooses, almost regardless of wind and weather. It is much faster than the sailing ship. It took the *Mayflower* nine weeks to bring the Puritans to America in 1620. It was a successful trip for the best sailing vessel a hundred years ago if it crossed the Atlantic in two or three weeks. Now giant steam liners cross in five days and keep to their schedules almost as exactly as an express train.

On land the steam engine worked equal wonders. Before its invention, transportation was by means of wagons and coaches drawn by horses, or by men traveling on horseback or on foot, or by small boats on the rivers and canals, driven by oars or wind or pulled by horses. What a change we see to-day! The whole country is crisscrossed with a network of railroad lines. Long trains of cars, loaded with thousands of tons of freight, and luxurious passenger trains are pulled swiftly and surely across the continent by powerful steam locomotives.

**Gasoline engines.** — Steam is not the only gas whose

expansive power has been harnessed to aid man in his production of wealth, though so far it is the most important. The power developed by the explosion of *gasoline* vapor has given us our gas engines and hence our automobiles and airplanes. The gas engine is often used now instead of the windmill to drive water pumps. It is better because it is always ready to work whether the wind blows or not. The gasoline automobile is one of the great modern inventions. For pleasure driving it has largely taken the place of the horse-drawn carriage, and the gasoline truck for business purposes is rapidly driving the horse from the city streets and even from the country roads. On the water, swift gasoline motor boats are doing work that is not suited to the clumsier steamboat. The gasoline engine is the only motor light enough for use in airplanes.

**Electricity.** — Electricity is another great motive force of nature. It is a force of great power and it is easily controlled. For many kinds of work it is superior to steam and other sorts of power. Its most familiar use is in driving the street cars in our cities and the "inter-urban" trolley cars about the country. Electricity has also been used to take the place of steam on some of the regular railroads. Electric locomotives now draw the passenger trains out of New York city on several railroads, and they draw the trains over some of the steep grades on the railroads that cross the Rocky Mountains. To tell of all the uses of electricity in the production of wealth would take us too long. We can mention the telegraph and the telephone, electric lighting and heating, electric fans for cooling the air in offices and homes, electric stoves for cooking, electric trucks and automobiles.

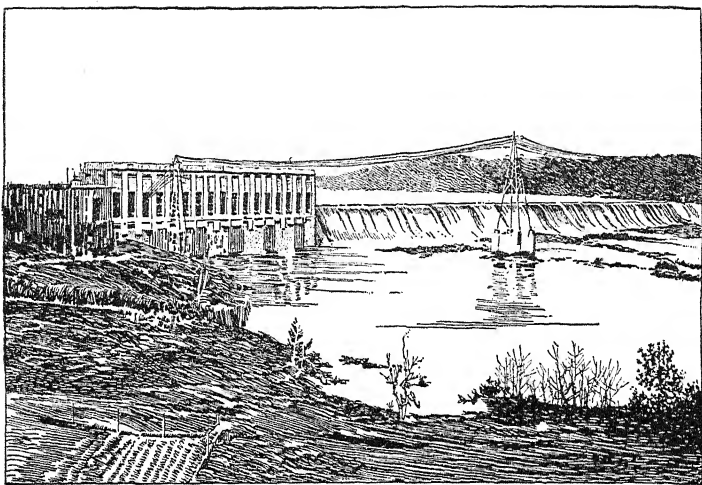
Electricity in usable form is not furnished directly by nature. It has to be generated by the use of some other

power, as water or steam. Most of the electricity for our trolley lines and city lighting systems is produced in great power plants by means of steam engines.

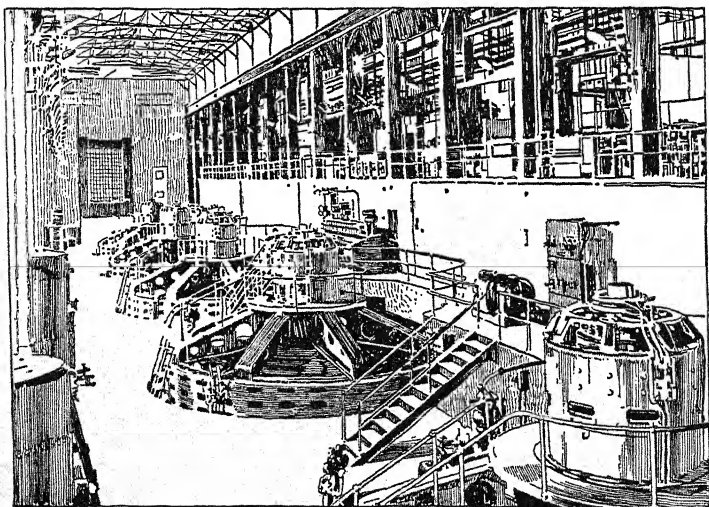
**Coal.** — Steam engines cannot run without *fuel*. Wood or coal or some other fuel must be burned under the boilers that generate the steam. Most of the steam engines of the world use *coal*. Every year millions of tons of coal must be dug out of the mines to keep the engines going. Is there enough coal in the world to keep man supplied with power forever? Certainly not. The coal is limited. How long will it last? Nobody can now say exactly. We know, however, that there is enough to last for a long time, although it is already necessary to dig deeper and work harder to get it. There is no need for worry now, but men are already beginning to ask what can take its place when we reach the end of the coal.

**What will take the place of coal?** — Other fuels, such as wood, oil, and natural gas, are limited in quantity, just as coal is.

It is very probable that men will make greater use of water power. This is possible now, since we have learned how to use electric power in so many ways. The trouble with the old water power mills was that they had to be located on the banks of swift streams. This often put them back in the hills, away from the cities where business was going on and where the people lived. One advantage of steam power is that the factory can be located anywhere. But now we can locate a great power house on a stream, whose water power generates electricity. The electricity can be sent through wires to distant cities and there used to run the trolley cars, light the houses, and furnish power to run machinery in the factories. Many such power plants may be seen along the



HYDRO-ELECTRIC POWER PLANT, GREAT FALLS, SOUTH CAROLINA



INTERIOR OF THE GREAT FALLS, S. C., POWER PLANT  
Showing some of the electrical machinery

streams of America and even more in certain European countries, as Switzerland, France, and Germany. The greatest development in the world is at Niagara Falls. The enormous force of the water going over the falls has been used to generate electricity which furnishes power in American and Canadian cities as far as 250 miles away.

**Nature may harm as well as serve man.** — Nature does not bestow her gifts freely unless man does his part. Indeed, nature sometimes appears to be not a friend to man, but a cruel enemy. The wind, instead of driving his ship or his mill, may wreck his house, sink his boat, or destroy his life. The river, instead of furnishing power to do his work, may rush over its bank and destroy him. The rain, instead of gently ripening his crops, may utterly ruin them. The wild animals are capable not only of furnishing man food and clothing and of becoming docile servants; they may also fall upon him and kill him and destroy his possessions. Even the great power, electricity, long before it came to be man's servant, was his deadly enemy, flashing out of the sky to burn and destroy.

**Civilization depends on knowledge of nature.** — The whole progress of civilization has been the result of man's learning about nature, understanding her laws, and slowly finding out how to make her serve him. The savage dreads and fears nature or even worships her as a hostile power. True, she furnishes him with whatever he has, but she does it grudgingly and she frequently lets him perish of famine and disease, or strikes him dead with her destructive power. Civilized man has learned to make nature his friend and his partner instead of his dreaded enemy. He has learned her laws, so that he can protect himself from her destructive forces. He has learned about her rich resources and her gigantic power

and how they may be grasped and harnessed to aid him in producing wealth to satisfy not only his necessities but the countless other wants which he feels and of which the savage never dreamed.

Man still has much to learn. He even now understands nature's laws only imperfectly. He still suffers harm due to his ignorance. Nature is ready to be an even more bountiful, powerful, and willing partner as man learns better how to make her serve him.

### EXERCISES

1. Give a list of ten important materials furnished by nature and not named in the textbook.
2. Give examples of five different kinds of natural motive forces used in your own city, town, or neighborhood.
3. Give examples of possible motive forces that are not now used in your city, town, or neighborhood.
4. How would your daily life be changed if there were no steam engines? State as many different ways as you can think of.
5. Give as many examples as possible of the use you have made of electricity during the past week.
6. What would be the result in your city, town, or neighborhood if the supply of coal should give out?
7. Name substitutes which might take the place of coal and explain how they would be used in your city, town, or neighborhood.
8. Give examples of recent harmful acts of nature of which you have personal knowledge.
9. How are the harmful results of nature's acts to be avoided?

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## CHAPTER IX

### LABOR

If production were left to nature alone. — When the first white settlers landed in New England, the whole company nearly perished of want in the very region which to-day is one of the wealthiest parts of the United States. Nature was the same then as now. But nature alone produced very little wealth to satisfy the wants of our colonial ancestors. Any one who has ever visited a tropical jungle has seen nature “working overtime.” There may be mahogany and other choice woods in the forest, herds of wild animals roaming at large, nourishing wild roots and fruits, and gold and silver under the ground. Yet little is there ready to satisfy human wants. Nature alone, in a tropical jungle, is not much of a success as a producer of wealth. An abandoned farm furnishes a more familiar example. How quickly its productive power fades away when once the hand of man is removed! Weeds and briars choke the grass of the meadows and overrun the fields. The orchards dwindle and decay and their fruit becomes defective.

Man must work with nature. — Important as the services of nature are, the fact is that, left to herself, she can produce very little wealth. Even the animals of the forest and the fish of the sea must be caught or killed before they can supply man’s wants. Timber from the forest and coal and iron from underground are obtained



only after much labor of man. When we consider a pair of shoes or an automobile, we easily see how much has to be done by man before nature's materials are made into these particular articles of wealth. Almost everything that nature gives requires some labor on man's part to make it into wealth ready to satisfy his wants. Wealth is the product of nature and man working together. Labor, then, is the second "partner" in production. By labor we mean what is done by human beings, and we might perhaps better call the second partner *man*, instead of *labor*. The word labor, however, is the term generally used in economics.

**Definition of labor.** — *Labor is an effort of man made wholly or partly for the purpose of production.*

**Physical and mental labor.** — People sometimes think of labor as meaning only bodily, or physical, labor. Thus the expression "laboring men" commonly means only those who perform bodily labor, such as gathering harvests, loading ships, or digging ditches. And we do not commonly think of the banker, the lawyer, or the teacher as a "laboring man." But this is not the correct meaning of labor in the science of economics. Labor includes not only bodily exertion, but also brain work of all kinds, thought, planning, overseeing, and directing. These two kinds of labor are termed *physical* and *mental*.

These two kinds of labor are not entirely separate. They always go together. Even the simplest kind of physical labor requires some small amount of thought. Men who work in gangs digging ditches in the city streets or shoveling earth along the railroad track are using some thought. Such work could not be done alone by horses or other animals, although their bodily strength is greater than that of man. Man's labor requires some intelligence, some mental effort, which the animals cannot give. On

the other hand, there is no labor that is purely mental. The banker and the lawyer have to use their hands in signing letters, handling papers, etc. The teacher, the artist, the musician are all doing work that is partly physical. In some labor, the mental effort predominates, in other cases, the physical. When mental labor is spoken of, that labor is meant in which the brain work is the important part. Physical labor is that in which the bodily effort is the chief thing. The word *labor* always includes both kinds, the mental as well as the physical.

**Different kinds of labor.** — It is the labor of men and women, boys and girls, which is the second partner in production. This is what occupies most of the active hours of the human race. Try to picture some of the different kinds of labor that are going on every day.

On the farms men are laboring, working with nature, to produce the harvests. In the forests men are cutting timber and sawing it into lumber or cutting it into fire wood. Down in the mines, the miners are getting out coal and iron and other minerals. From the farms and forests and mines wealth is being carried by truckmen, boatmen, and railroad workers to elevators, mills, and factories, near by or in distant cities. In thousands of factories men, women, and children are laboring to make every imaginable article of wealth: food, clothing, and every luxury that man desires. In the stores, merchants and clerks are distributing wealth to the people who are to use it. In the great city office buildings and in the small towns and villages we find bankers and lawyers, managers and employers, clerks and stenographers, all laboring on some stage of production. In the hotels and restaurants and in the homes, people are busy preparing and serving food, and providing and caring for various other necessities and comforts of life.

It may perhaps seem at first that some of these people have very little to do with the production of wealth. It is true that the employer, the lawyer and the stenographer do not actually handle wealth as do the farmer and the storekeeper. But their labors are no less a part of production, since without their part the work of the others would be less productive or would cease entirely.



TWO PRODUCERS OF PIONEER DAYS: THE PLOWMAN AND THE GUARD

There are other workers that seem still more remote from the production of wealth. What do the policemen do, the judges, the army and navy, the teachers, the scientists and inventors? Do they have any part in the production of wealth? Most certainly. The army and navy, so far as they are necessary to protect the country from invasion by foreign enemies, make it possible for the

other workers to go about the business of production undisturbed. In the early days in America, it was sometimes necessary for certain men to stand guard while others worked in the fields. This was to protect the workers against attack by the Indians. The men who stood guard were working in the production of wealth just as much as those who gathered the harvest.

In the same way the policemen protect the workers from disturbance and attack and they protect wealth from robbery and destruction. Thus they are laboring in production. Lawyers and judges, who settle disputes about ownership of wealth, are helping in the production of wealth. In places where courts are good and the police protection is efficient, the production of wealth goes on much better than in some wild, frontier place, where there is no protection against robbers and murderers and where disputes about the ownership of wealth are settled by violence.

Some laborers are not engaged primarily in production of wealth. These are the persons who perform services that satisfy human wants directly, such as actors, musicians, and professional baseball players. These persons, as we learned in Chapter VII, are performing productive labor, which may be no less useful and important than that which produces wealth. In the present part of our study, however, we are mainly interested in the labor that leads to the production of wealth.

**Efficiency of labor.** — Some laborers are more efficient than others. By the *efficiency of labor* we mean its power to produce. Let us study the qualities that make labor efficient. First come health and bodily strength. Next comes a keen and active mind. Another important quality is interest and ambition. The worker who takes an interest in his work, who is eager to make

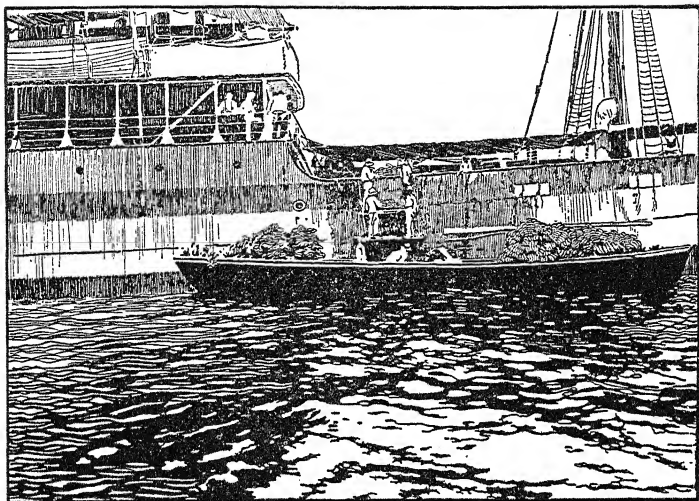
it as good as possible, who is ambitious to produce more and to rise to a better position, is the one whose labor is efficient and produces much. A certain amount of education and technical knowledge is necessary for every job. The machinist must acquire special knowledge by study and experience before he becomes an expert. The telegraph operator must have another kind of knowledge. Every good worker must "learn his trade."

**Efficient and inefficient laborers.** — People are not all alike in these qualities that make for efficient labor. Some are weak, some strong, some lazy and ignorant, some keen and well educated. There are men who are so lazy and shiftless and ignorant that they cannot do anything well. They are not good for much as producers. People say they "aren't worth their salt." They are *inefficient*. On the other hand there are men in every town who are *efficient*. They are well and strong bodily, they have keen, wide-awake minds, they have been well educated, they have learned the technical knowledge necessary for their jobs, they are ambitious. Such men perform their work well, and they usually rise to positions of importance and responsibility.

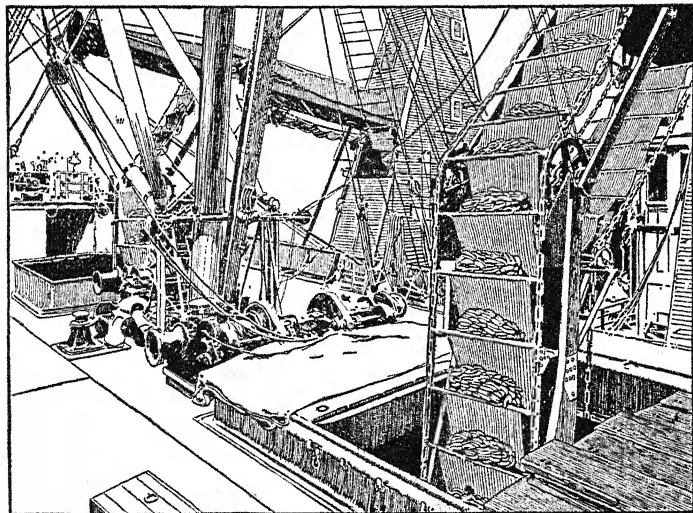
The amount of wealth produced in any country depends largely on the efficiency of its labor. One reason why America has been so prosperous and has been able to produce such huge quantities of wealth is because her labor has been so strong, intelligent, and ambitious. One reason why certain uncivilized parts of the world remain poor is that the native laborers are so lazy, ignorant, and generally inefficient.

#### EXERCISES

1. Is wealth ever produced without labor?
2. Explain the difference between labor and play. Give examples.



LOADING A SHIP WITH BANANAS BY INEFFICIENT HAND LABOR



UNLOADING THE BANANAS BY MACHINERY OPERATED BY SKILLED LABOR

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3. State whether each of the acts in the following list is or is not labor, and give reasons: (1) a boy playing baseball, (2) the playing of a professional ball player, (3) the efforts of a burglar to "crack" a safe, (4) the unsuccessful efforts of firemen to save a burning house, (5) the work of a dray horse, (6) the work of a billboard painter, (7) the work of a school teacher, (8) the work of writing the answers to exercises in this book, (9) a judge deciding cases in court.

4. Name some examples of labor which is not at all disagreeable.
5. Name some examples of disagreeable effort that is not labor.
6. Why do we call brain work labor?
7. Explain the difference between efficient and inefficient labor.

References for further study. — Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. I, pages 15-29.  
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Marshall, A., *Principles of Economics*, Seventh Edition (1916), pages 173-219.

## CHAPTER X

### COÖPERATION IN LABOR

The "barn-raising." — In the pioneer days on the frontier there was an institution called the "barn-raising," still found in some country districts. When a barn was built the heavy timbers of the frame were first made ready. Then on a certain day the men and boys of the whole neighborhood gathered to "raise" them and fasten them together, thus erecting the frame in its place on the foundation. The performance was often an important social event, accompanied by eating, drinking, and a general good time. Besides being a social event, the "raising" illustrated an important principle of economics. A task which would have been quite beyond the power of the builder of the barn alone, became easy when a number of men combined.

Advantage of working together. — In many kinds of work it is advantageous for two or more persons to work together, because they are thus able either to perform tasks that would be impossible if they worked separately, or to produce a greater result than could be accomplished by the same number of men working separately.

Definition of coöperation. Two kinds. — *The working of two or more persons together in production is coöperation.* There are two kinds of coöperation: (1) *Simple coöperation is that in which the several workers are all performing the same kind of work.* (2) *Division of labor is coöperation in which the workers are performing different tasks, or different parts of the same task.*



**Division of labor.** — The examples given so far have been of simple coöperation. A good example of division of labor is the coöperation of a bricklayer and a hodcarrier. They work together to build the house, but they perform different parts of the task, do different kinds of work. This is quite different from simple coöperation, in which all are doing exactly the same kind of work. Other common examples of division of labor are the motorman and conductor on a trolley car; principal, teachers, pupils, and janitor in a school; a baseball nine when the opposing team is at bat.

**Savages have little division of labor.** — Among savage people, all the men do about the same things. They all fight, hunt, fish, and make their weapons. There may be simple coöperation, but there is very little division of labor, the one important example being the division of different tasks between the men and the women. While the men are engaged in hunting and in fishing, the women attend to the huts and prepare the food. Among such primitive people each family must generally produce everything it wants. This kind of industry is laborious and unproductive, and such people never can have much wealth to satisfy their wants.

**Modern division of labor.** — In modern civilized countries everything is different, owing to the fact that there is division of labor. Nobody to-day tries to produce everything he requires to satisfy his wants. Each worker now has his own job, or trade, or profession. Occupations are separated into hundreds of different kinds of work, and in each occupation the workers center their activities on just one thing. One can easily observe this by looking about in any small town. Some men are carpenters and work all day at that single trade; others are blacksmiths, bricklayers, or plumbers. The plumber

does not work at carpentry, and the carpenter does not even put the water pipes into his own house. Other men are merchants, lawyers, doctors, teachers. Once in a while, it is true, we find some man who works at many trades. Such a man we call a "jack of all trades," but there are generally only a few such in any village.

In a large city, division of labor goes still further. Each industry is split up into different parts. The blacksmith no longer does all the different things which the village blacksmith does. Horseshoes are made by one set of workers; horseshoe nails, by an entirely different set. Besides the "general store" handling all kinds of goods, we find clothing stores and grocery stores, book stores and shoe stores, and numerous others. The physician's profession is split up among specialists. We have eye doctors and throat doctors and surgeons who spend all their time on certain kinds of operations. In like manner, we have corporation lawyers, patent lawyers, railroad attorneys, and others.

A visit to a modern factory will show how far the division of labor has been carried. Thousands of men, women, and children work together in the same building, each performing one small task over and over again. Down in the basement engineers tend the engines which furnish the power, and stokers keep the coals hot under the fires. In the office we find bookkeepers, clerks, and stenographers. A boy runs the elevator, teamsters and chauffeurs drive wagons and trucks about the yard; and on different floors we find different kinds of machines and different workers, each performing one process on a particular kind of machine.

**Advantages of division of labor.** — The important thing about the division of labor is that it causes a great *increase in the amount of wealth* produced. There are

many reasons for this increase. First, division of labor *permits of greater skill*. When a man works at one simple task alone, he becomes much more skillful at it on account of the practice he gets. A professional ball-player would never become so skillful if he had also to work on a farm and handle a machine in a factory. By devoting all his time to his one trade he is able to become an expert. The ordinary factory worker displays wonderful skill and swiftness. This is the result of the long practice he has had at his particular task.

Second, division of labor *makes it possible to learn a trade in a shorter period of time*. Formerly boys were apprenticed to a trade, and it took several years to train a professional workman. To-day, boys and girls working in a factory can, in a few weeks, learn to perform some small task very well.

Third, division of labor *secures economy of tools and machines*. The village carpenter must have in his shop a great many different kinds of tools and machines, but he can use only one at a time, while the rest lie idle. In a great factory all this is changed. Each man works with one particular tool or machine. The others are being used by other men, and all are kept continuously employed.

Fourth, division of labor *prevents loss of time through the workers changing from one job to another*. This is one of the difficulties on the farm, where it is possible to have only a small amount of division of labor. The farmer has to lose a great deal of time going from milking to plowing, and to all the other kinds of work that must be done during the day. Where there is division of labor, this loss is greatly reduced.

**Disadvantages.** — On the other hand there are some disadvantages. Doing one simple thing over and over

becomes monotonous and tiresome. Some people fear the effect on the workers. They fear that their minds are being deadened, or that they have become so specialized that they cannot easily turn to other work when they lose their jobs. There is, however, little evidence to support the fear of mental decay. As to learning another trade, the facts are just the reverse. Modern division of labor makes it easier for workers to go from one occupation to another. A worker in a watch factory could take up work in an automobile factory much easier than a man who made a whole watch could learn to make an automobile. The disadvantages of division of labor are not very serious and are far outweighed by the incalculable gain of increased production.

**What is an economic law?** — One of the great *economic laws* may now be formulated. What is an economic law? One naturally thinks of a law as a rule of the government saying what people shall or shall not do. In science a law is something quite different. For example, the "law of gravitation," a law of the science of physics, states that there is a force which tends to cause all bodies of matter to move toward each other. It is this force which tends to cause bodies to fall to the earth. Notice that the law of gravitation does not state that all bodies are actually falling to the earth. In fact, if we look about us we may see very few bodies falling to the earth and we may see numerous bodies up in the air and neither resting upon the earth nor falling to it. What the law of gravitation states is that bodies tend to fall to the earth. This means there is a force that will always make any body fall to the earth if some other force does not counteract it. An airplane does not fall to the earth, because other forces are working against the force of gravitation. The airplane will certainly fall just as soon as its motor stops. So

a bird will fall just as soon as it is shot and unable to use its wings. We use the word "tend" in a scientific law to mean that a certain result will always follow a certain cause, unless some other force interferes. We have then this definition: *A scientific law is a statement of the necessary relation between things, or a statement of the effect which always tends to follow a certain cause.* Every scientific law is a statement of a *tendency*; that is, a statement that certain results would always follow if certain conditions were fulfilled. When the conditions are not fulfilled, the result does not necessarily follow. Every science has its appropriate laws. Thus in the science of economics we have economic laws.

**The law of coöperation.** — The economic *law of coöperation* may be stated as follows: *When two or more persons work together, the production tends to be greater than when each works separately. Simple coöperation tends to increase the production somewhat; division of labor tends to increase it still more.*

**Division of labor causes dependence on others.** — An important result of the division of labor is that most people spend nearly all their time in making things for which they have no need themselves. The farmer, it is true, raises a good deal of his own living from the farm, but even he produces much more corn and wheat, milk and meat, than he needs for himself. Most of what he produces he sells to others. Most people use very little of their own product. A workman in a shoe factory may help to turn out thousands of pairs of shoes in a year, but not more than two or three pairs will be for his own use. Many workers spend all their time making wealth for which they never have any use themselves. A man who works in a factory which makes ladies' shoes only, will never have any use for the wealth which he produces.

A workman in an automobile factory may never own an automobile. It follows that almost everything man wants has to be made for him by other people. This makes him dependent on others.

**Territorial division of labor.** — There is division of labor not only among different people, but between different parts of the country. This is called *territorial division of labor*. Certain parts of the country are devoted to agriculture. The great farming states of the middle west raise wheat and corn, cattle and hogs, to furnish food for the whole country. Certain cities in the United States are devoted to particular kinds of manufacture. When one hears of Detroit, one thinks at once of the manufacture of automobiles. In some parts of the country men are occupied in mining coal and iron, while gold and silver mines are found in still another part. Cotton, which is manufactured into clothing in the factories of New England, is raised in the states of the south.

**International division of labor.** — There is also *international division of labor*. Wheat, which is raised in the United States, in South America, and in Australia, is sent to feed the people of many other nations. Coffee, which is produced in Brazil, is sent to the breakfast tables of the whole world. Diamonds are obtained from the mines of Africa. Each country has its own industries, from which it has a surplus to send to other countries, and each country in turn has to get certain things, which it needs and does not produce itself, from other lands.

**Division of labor requires transportation and trade.** — It can easily be seen that all this division of labor is possible only when we have transportation by means of railroads and steamships, which carry the things made in one place to other places where they are needed. Trade also is necessary, by which the products of one man may

be sold to others whose wants they supply. And there must be markets, where every person can buy the things which he needs, things which have been produced by hundreds and thousands of other people the world over. We shall study about trade and transportation and markets in later chapters in this book.

### EXERCISES

1. Give five examples, not named in the textbook, from your own personal knowledge, of simple coöperation.
2. Explain how each of the acts of coöperation named in the answer to Question 1 made human labor more productive.
3. Give five examples, not named in the textbook, from your own personal knowledge, of division of labor.
4. Explain how division of labor increased production in each of the cases named in the answer to Question 3.
5. What is a scientific law? Give some examples not named in the textbook.
6. What is the difference between a scientific law and a law of government?
7. Explain the economic law of coöperation.
8. State some things of which you would be deprived if there were no territorial division of labor.
9. Name some persons of your acquaintance who would lose their present positions if there were no territorial division of labor.

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## CHAPTER XI

### CAPITAL AND CAPITALISTIC PRODUCTION

The third "partner" in production. — This chapter tells how wealth serves as an aid in the production of more wealth. Nature and man seldom work entirely alone in production. Certain tools, instruments, and machines are nearly always present. Man calls nature to his aid in the furnishing of motive forces, but domestic animals can do nothing without certain instruments — such as plows and wagons. Nature cannot serve man through the power of the wind except by means of wind-mills or ships. The application of steam power and electricity necessarily requires steam engines, motors, and all the complicated machinery of the modern factory or railway system. Even in the simplest tasks, where man is working almost alone with nature, some tool, such as a spade, a scythe, a rake, a fishing net, or a bow and arrow, is necessary. Therefore, the successful production of wealth requires not only the contributions of nature and the labor of man, but also certain articles of wealth, which we call *capital*. The term capital is used in economics and business in three senses, and it is necessary to have a clear idea of each of these meanings of the word. For the present we are concerned with the first meaning only, for which we have this definition: *Capital consists of all wealth except land (land being understood to include also the water and all natural resources, in short, nature)*. This is to say, capital consists of *produced* wealth. The other meanings of the term capital will be studied later (Chapter XIII).



**Production without capital.** — The importance of capital will be easily understood if we try to picture the conditions under which wealth would be produced without the aid of capital. One can hardly conceive of men getting even the necessary food to keep them alive with nothing to work with but their bare hands. The earliest primitive man probably did this at first, but it must have been a laborious and discouraging task. The best he could do was to find and pick wild fruits and berries, and perhaps occasionally catch birds, animals, or fish with his bare hands. Real hunting, without any instruments for catching and killing the game, was, of course, impossible. The same was true of fishing without hooks, lines, or nets. Farming could not be carried on without tools. The early settlers in America had a hard enough time at first, although they brought a variety of tools and instruments with them. If they had been set ashore without such aids in the battle of life, it is likely that not a single one would have survived.

**The beginning of capital.** — Little is known about the beginning of capital. Its use must have originated ages ago among primitive men. In some way the savage man must have conceived the idea that he could kill more game if he had some sort of weapon. Probably he first tried a stick or club. Then came the notion of a spear. To make it would take time from his hunting. But one day his luck was good and he brought home a big supply of food. Resisting the temptation to eat it all at one grand feast, he laid aside enough to keep him for a day or two. During these days he did not have to hunt. He devoted them to the labor of making a spear. His wisdom was proved in the next day's hunting, when he found that with his new weapon he could in a few hours get more game than in a whole day before. It was now

easier to lay up extra food, and he spent a few days making a bow and arrows. Again the result was an increase in the product of his hunting. In the course of time, there followed nets for catching fish, the catching and training of animals, and rude instruments to scratch up the ground for a simple kind of farming.

Of course no one savage man did all this. We are merely trying to picture the probable way in which the first crude capital appeared and how it was slowly increased and improved during many generations of prehistoric men.

**Modern capital.** — In modern times the development of capital has been enormous, and to-day there is almost no such thing as the production of wealth without the use of capital. The following table contains an estimate of the total wealth in the United States, namely, \$284,457,000,000.\*

ESTIMATED WEALTH OF THE UNITED STATES  
(in millions of dollars)

City real estate and mines.....	87,801
Farm real estate.....	59,900
Live stock.....	9,986
Farm implements and machinery.....	2,907
Agricultural products.....	13,242
Gold and silver coin and bullion.....	3,838
Railroads and their equipments.....	12,830
Public service plants and equipments.....	11,767
Mining products.....	2,346
Manufacturing machinery, tools, etc.....	12,002
Manufactured products.....	43,461
Imported merchandise.....	1,719
Automobiles.....	4,380
Clothing, personal ornaments, furniture, etc.....	18,278
Total.....	284,457

\* Wilford I. King, *Jour. Am. Statistical Ass'n.* Sept. 1922, p. 322.

**Capital depends on saving.** — Let us go back again to our primitive man, in order to learn more about the nature of capital. In order to have capital, he had to have more food than he needed to satisfy his necessities, and he had to forego the pleasure of immediately consuming his whole supply. He had to make the sacrifice of *saving*. This is one of the important facts about capital. If all persons used up, for the satisfaction of their immediate wants, everything they acquired, there would be no capital. Capital is accumulated only out of the surplus which can be spared after the satisfaction of immediate wants. This requires saving.

Our present mass of capital is the result of the savings of many thousands of people. Whenever any one saves something from his wages or salary or other income and puts it in the savings bank, or buys stocks or bonds, or lends it to some one in business, just so much has been added to the fund of capital. Capital is likewise accumulated when the business man saves something out of his profits and uses it to enlarge his business plant, to build an addition to his factory, to add to the stock of goods in his store, to buy new machinery, or in any other way "to put it back into the business." The farmer accumulates capital when he saves out of his profits to build a new barn or buy new machinery. Thus, on every side men and women, rich and poor, are saving and adding to capital, some using their own capital, some entrusting it to others through loans and investments.

**Production with capital is a roundabout process.** — The experience of our primitive man brings out another important truth about capital. What he most desired was food; namely, the game he killed. Yet he spent a whole day doing no hunting at all, but making a spear. He could have obtained some food that day if he had

hunted, instead of making the spear. He did not seek his food directly, but went after it in a "roundabout way."

**A modern example.** — This characteristic applies also to modern production. One seldom proceeds in the most direct way to produce the thing he wants. A series of things is first made whose only purpose is to aid in finally turning out the desired product. For example, men do not make shoes directly from the materials furnished by nature. In the first place, some men must dig into the earth and bring up iron. This does not mean that shoes are made of iron. Others dig into other mines and bring up coal, although nobody is so foolish as to think shoes are made of coal. The coal is shoveled into furnaces in factories. Iron is brought to the factories, is treated in various ways, and is then made into machinery. With cement, brick, and wood, a shoe factory is built, in which the machinery is installed. Here, also, are brought leather and numerous other materials which have been produced by various processes, in different parts of the country. Finally, the workers in the shoe factory turn out the shoes, which are the real product sought through all this long process. We thus see what we mean by *capitalistic production* and why we call it a "roundabout process."

**Two ways of satisfying human wants.** — It is evident that in this roundabout process a great many articles of wealth are produced which cannot directly satisfy any human want. No one could get any direct satisfaction from the use of shoe-making machinery. Such machinery is wanted only because it will aid in the production of shoes. It appears, then, that wealth satisfies human wants in two ways, either *directly* or *indirectly*. Food satisfies *directly* the want of nourishment, or hunger. Such things as clothing, dwelling houses, baseball bats, touring cars, and pearl necklaces are desired because they

satisfy directly certain human wants. On the other hand, we desire plows and sewing machines, but not in the same way as we desire bread or jewelry. Plows and sewing machines satisfy directly no human want, but they can be used to produce other kinds of wealth which will give direct satisfaction. This is what we mean by satisfying human wants *indirectly*. All such articles as machinery, tools, and materials, whose only purpose is to aid in the production of other kinds of wealth, are called *intermediate goods*.

**Wealth that satisfies wants only indirectly.** — A surprising portion of the world's wealth consists of these intermediate goods, incapable of serving us in any direct way. Almost all the wealth of a manufacturing city would appear utterly unable to satisfy directly any want of men. The great factory buildings, full of machinery, are simply instruments which serve in the production of other articles of wealth. The warehouses and stores, railways, and office buildings, are for the same purpose. Many of the most useful materials which nature furnishes are in this class. There is no want which can be satisfied directly by iron. The use of iron is to be made into things which may satisfy our wants, either directly, as, for example, skates, or indirectly, as tools and machinery. A great part of modern industry is engaged in making things whose only purpose is to aid in the production of other kinds of wealth. This is true of mining, of logging, and of much manufacturing. Whole factories are devoted to the manufacture, not of food and clothing and articles for the enjoyment of man, but simply tools and machines. Machines are even made, the only purpose of which is to make other machines.

**Some capital satisfies wants both directly and indirectly.** — It must not be supposed, however, that the

capital which serves for the production of wealth is never able to serve man directly. Many kinds of capital, while they aid in the production of more wealth, are at the same time directly satisfying human wants. One of the most important of these is food. Just as a steam engine cannot run without coal, so the human machine must be supplied regularly with food. But the food we eat is at the same time satisfying one of our most important wants. In like manner the buildings in which a gang of workmen are housed when at work are instruments of production while also satisfying the want of shelter.

**Almost all wealth aids in the production of more wealth.** — In fact, nearly every kind of wealth that satisfies directly the wants of mankind is also aiding in the production of more wealth. This is true of all wealth in the form of schools and colleges, where boys and girls and men and women are being trained for the productive work of life. Even many of the instruments of sport and recreation, which at first seem to be the very opposite of productive capital, are still useful for the production of wealth. In order to be an efficient worker man must have rest, exercise, and recreation. When the busy lawyer, manufacturer, or merchant leaves his office, gets into his automobile, and goes out for an afternoon on the golf links, he probably does not think of his clubs, his automobile, or the golf course as being employed in the business of producing wealth. As a matter of fact, these things are promoting his health and making him a better worker. They are, therefore, serving in the production of wealth, along with the factory or office building where he spends his working hours. The only kinds of wealth which do not thus serve are those which satisfy man's wants without doing anything

to increase his productive power. Intoxicating liquors would generally come under this class. Such things

are apt to decrease man's working power and so hinder and interfere with the production of wealth, rather than aid it.

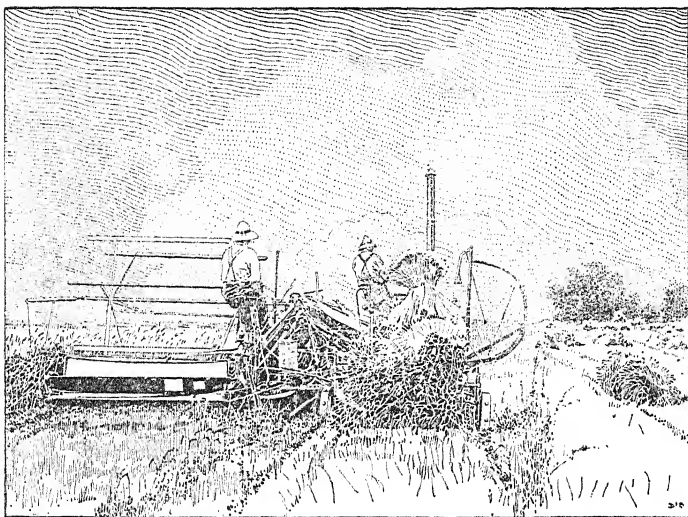


CUTTING GRAIN WITH A CRADLE

Capital increases the productivity of industry. — The fact that intermediate goods are incapable of satisfying directly any want raises this important question: Why are men willing to undergo the sacrifice of saving, to

wait patiently during the long roundabout process of production, to devote so much of their labor and capital to the production of intermediate goods, which can never give them any direct service? The answer is that in the long run they thereby get a greater abundance of the things that do serve them directly. The roundabout capitalist process is more productive. It was this that led the primitive man to deny himself present pleasure, to save some of his food, to labor on the production of a spear. The result was that he was able to secure an abundance of food and other enjoyable things which otherwise he never could have had.

A more modern example is the great farming district of the Mississippi valley, which was settled by a hardy body of pioneers, thrifty and intelligent, but possessed



CUTTING, BINDING, AND SHOCKING GRAIN BY TRACTOR-DRAWN MACHINERY

of little capital. At the beginning, in spite of strenuous efforts, they raised only meager crops. Yet, from even those scanty harvests, they saved something, though saving meant heavy sacrifice. They saved because they wanted capital with which to increase the product of their farms. Sometimes they borrowed money to buy capital. Gradually they acquired better plows and wagons, up-to-date harvesting machinery, bigger barns, and improved breeds of stock. All this required saving, either at the start or later when interest payments were made and loans repaid. It was a roundabout process for obtaining the enjoyments of life. It involved tying wealth up in intermediate goods, but it finally brought better and bigger crops, and a greater satisfaction of wants. Many of the pioneers became wealthy men, were



able to live their later years in comfort, and left respectable fortunes to their children. Without the sacrifice and saving which made possible the capitalistic method of production, they and their children might have continued to struggle, throughout their years, for the bare necessities of life.

**Conclusion.** — Capital, then, is worth all its costs of sacrifice and saving. The whole modern system of production rests upon capital. There is no possible way of calculating the increased productivity of industry due to the use of capital. But there can be no doubt that, except for its use, modern civilization would have been impossible and the human race would still be in a state of savagery.

#### EXERCISES

1. What did Robinson Crusoe have in the way of capital? How different would the story have been if he had had no capital?
2. Can you think of any worker of your acquaintance who does not use capital in his work?
3. Name ten important kinds of capital used in industries in your own city, town, or neighborhood.
4. Explain the difference between direct and indirect satisfaction of wants.
5. Name some articles of wealth that satisfy wants directly only; indirectly only; both directly and indirectly.
6. Why does it pay to produce things that cannot directly satisfy any human wants? Have you ever made anything of that sort yourself? If so, why?
7. What are some of the reasons that lead people to postpone immediate satisfaction of their wants? Give some examples.

**References for further study.** — Marshall, A., *Principles of Economics*, Seventh Edition (1916), pages 220-239. Walker, F. A., *Political Economy*, Third Edition (1888), pages 61-69. Seager, H. R., *Introduction to Economics* (1905), pages 125-128; 130-136. Carver, T. N., *Principles of National Economy* (1921), pages 189-212. Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. I, pages 67-79.

## ✓ CHAPTER XII

### BUSINESS ORGANIZATION

**Three classes of workers.** — With only a few exceptions, all mankind who are mentally and physically able to work are engaged in production. As a result of the division of labor in modern industry, the workers are divided into three great classes.

(1) **Independent workers.** — The *independent workers* are those who do not work for wages or salaries from other persons, and who either do not pay wages or salaries to others or at most employ only a few assistants. They plan their own work and receive their pay from those to whom they sell the products of their labor or for whom they perform services. Lawyers, doctors, dentists, poets, authors, and artists belong to this class. The village shoemaker, tailor, blacksmith, and small storekeeper are generally of this class; also the small farmer and truck gardener. Carpenters, masons, dressmakers, and others are often independent workers.

(2) **Employers.** — *Employers* are those who hire workers to labor under their direction and pay them wages and salaries. Most business men belong to this class. Manufacturers, merchants, and contractors, master carpenters, master masons, master plumbers, owners of railways and steamships, and countless other kinds of business men and women belong to the employer class. Farmers who hire farm laborers to work for them are in this class. The government of the United States, the state government, the county, the city, and the town are also employers of labor. The employers are a very im-

portant class in modern capitalistic production. They bring capital and labor together to work with nature in producing wealth. They take the responsibility and the risks. They are the organizers, the "captains of industry." For these reasons the employers are often called *entrepreneurs*, a French word which means those who undertake direction and responsibility.

(3) **Employees.** — *Employees* are persons who work for wages or salaries. They work under the direction of the employers, from whom they receive their pay. This is by far the largest class of all. Men, women, and children working in factories, clerks in stores, farm hands, stenographers, teachers, and many others are in this group. In economics we use the term *wages* to include both wages and salaries; i. e., we regard salaries as a form of wages.

**Capitalists:** "Capital and labor." — *A capitalist is a person who owns a considerable amount of capital.* He may belong to the employer class or possibly to the leisure class. In the first case, he is using his capital himself in business. In the second case, he does not engage in business himself, but hands his capital over to other persons, by investing or lending, and these others use his capital in business and pay him an income for its use. It is possible for an independent worker or an employee to be a capitalist; sometimes a man owns some capital but still works for himself or hires out for wages or salary, either because he prefers to or because he does not have enough capital to live on its income. But the employee class, as a whole, usually has very little capital. People sometimes speak of the *capitalistic class*, by which they generally mean the leisure and employer classes, as distinguished from the laborers, or *labor class*. The words "capital and labor" are often so used.

In connection with the use of capital there are three types of business organization: the *individual business man*, the *partnership*, and the *corporation*.

**Individual business men.** — *The individual business man has a business owned by himself.* He may own also the land and buildings and other wealth which he uses in his business, or he may rent land or buildings or machines. In the latter case he pays *rent* to the owners of such land or capital. Or he may borrow money with which to buy wealth to use in his business. In that case the land and capital belong to him, but the capitalists who lent him the money have a property right in his business, and he pays them *interest*. The individual business man also pays money for wages and salaries and for materials and supplies and other expenses. He receives money for goods sold or services performed and so makes *profits* or suffers *losses*. He alone directs the business and receives the profits or bears the losses.

**Partnership.** — *A partnership is an association of two or more persons who own a business jointly.* Each partner may furnish money to buy land and capital, or the money may be supplied by only one or several of the partners. They may rent or borrow land or capital just as the individual business man does. One or several or all of the partners jointly may direct or manage the business. They may do all the other things which are done by the individual business man. But since the business belongs to all the partners, the profits and losses are divided among them proportionately according to an agreement drawn up when the partnership was formed.

Partnerships are useful because two or more men can often do better in business by working together than if each worked by himself. For example, Mr. A, who has considerable wealth, but no business ability, may form

a partnership with Mr. B, who has no capital but is a good business man. A furnishes the capital and B does most of the work of managing the business, and they share together the profits, which neither one could have made by himself. Again, two or three men often form a partnership because they have different kinds of skill. One lawyer may be learned and skillful in preparing cases, but can not successfully present a case to the court. Another lawyer may be an eloquent speaker, but weak in planning his cases. Two men, with these differing abilities, form a partnership and accomplish more than if they worked individually.

**Corporation.** — *A business corporation is a special kind of association of capitalists which in the eyes of the law is regarded as an artificial person.* Suppose a number of persons wish to unite their wealth for business purposes. Instead of forming a partnership, they may organize a corporation, under state laws which direct how this shall be done. They obtain from the state a *charter*, which gives permission to form the corporation and defines its rights and duties. They decide how much wealth shall be put into the business, and divide this amount into *shares*. Each of the organizers subscribes a certain amount of money and in return receives shares to that amount. For example, suppose ten men form a corporation and put in fifty thousand dollars. They may divide this into five hundred shares of one hundred dollars each. Then A may take five shares, paying five hundred dollars; B may take one hundred and fifty shares for fifteen thousand dollars; C may take one share for one hundred dollars, and so on, the five hundred shares being divided among the ten organizers. Since the organizers receive shares, they are called *shareholders*. The shareholders hold a meeting and elect a president, a secretary, a treasurer

(and possibly other officers), and a board of directors, to manage the business. Sometimes the directors choose the president and other officers.

The law regards the corporation as a sort of person. It can own wealth and have debts; it can buy and sell, hire and borrow; it can bring suits in the courts and be sued. The corporation engages in business, like an individual or a partnership. It may make profits, to be shared by its shareholders according to the number of shares each owns; or it may suffer losses. The corporation is so important that the next chapter will be devoted to its study.

### EXERCISES

1. To which economic class (if any) does each of the following persons belong? (1) a bricklayer, (2) a physician, (3) the physician's chauffeur, (4) a girl at boarding school, (5) the governor of the state, (6) a policeman, (7) a hotel proprietor, (8) an army officer, (9) a West Point cadet, (10) a tramp.

2. Is it possible for a person to belong to more than one class? If so, would any of the persons in Question 1 be likely to belong to more than one class? To which classes would they be likely to belong?

3. What is a capitalist? What is meant by the phrase, "capital and labor"?

4. What are the principal differences between the partnership and the corporation? In what respects are they similar? Summarize the principal advantages of each.

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## CHAPTER XIII

### CORPORATIONS

**The corporation's property account.** — A corporation is a "legal person" or an "artificial person," as distinguished from individuals or "natural persons." Like natural persons, the corporation has assets and liabilities and a property account. The best way to learn about the corporation is to study its property account, which business men call the *balance sheet*, or *statement* of assets and liabilities. In Chapter XII is described the organization of a corporation by shareholders taking 500 shares at \$100 each. The property account of this corporation just after its organization would read like this:

STATEMENT OF EAGLE MERCANTILE CORPORATION,  
JANUARY 1, 1922

<i>Assets</i>	<i>Liabilities</i>
Cash.....\$50,000	Capital stock.....\$50,000

**Capital stock.** — The corporation owns the cash which the organizers paid in; hence, that is the asset of the corporation. The corporation does not have any debts, and if this account were like those studied in Chapter V, "Balance, \$50,000" would be written on the liability side. In corporation accounts, however, it is necessary to recognize the rights of the shareholders on account of what they have invested in the corporation. They are the real owners of the corporation. But since the corporation is regarded as a person owning the assets, it must put in its statement the rights of the shareholders against it as a liability. This is the meaning of the

item, *capital stock*. Since the capital stock belongs to the shareholders, they are often called *stockholders* and their shares are called *shares of stock* or simply *stock*.

Suppose that the corporation buys land and a store building for \$20,000 and spends \$25,000 for a stock of goods. Its balance sheet would then read:

STATEMENT OF EAGLE MERCANTILE CORPORATION,  
JANUARY 5, 1922

<i>Assets</i>	<i>Liabilities</i>
Real estate.....\$20,000	Capital stock.....\$50,000
Merchandise..... 25,000	
Cash..... 5,000	
<u>\$50,000</u>	<u>\$50,000</u>

The term *real estate* means land and buildings and permanent structures or improvements on the land.

**Bonds and notes.**— When a corporation borrows money it issues *bonds* or *notes*. Both *bonds* and *notes* are the corporation's promise to pay money. Bonds are generally promises to pay a long time in the future, often as long as twenty or thirty years, or even longer. Notes are usually for short periods, a few months, or at most four or five years. Suppose, after January 5, 1922, the Eagle Mercantile Corporation should borrow \$20,000 by means of bonds and \$5,000 by notes and should spend \$15,000 of the borrowed money for additions to its building and keep the remaining \$10,000 in cash. Then the statement would read:

STATEMENT OF EAGLE MERCANTILE CORPORATION,  
JANUARY 10, 1922

<i>Assets</i>	<i>Liabilities</i>
Real estate.....\$35,000	{ Bonds..... \$20,000
Merchandise..... 25,000	
Cash..... 15,000	{ Notes..... 5,000
	Capital stock..... 50,000
<u>\$75,000</u>	<u>\$75,000</u>



Now that the corporation has incurred debts to outsiders, it has two kinds of liabilities: (1) the rights of outsiders (bonds and notes) and (2) the rights of the shareholders (capital stock). The persons from whom a corporation borrows by means of bonds are called *bondholders*, because they own the corporation's bonds.

**Surplus and undivided profits.** — Suppose that the land rises in value so that the real estate is worth \$45,000, and that merchandise is bought and sold at a profit so that the corporation has merchandise worth \$34,150, and \$20,525 in cash. The statement might then read:

STATEMENT OF EAGLE MERCANTILE CORPORATION,  
DECEMBER 31, 1922

<i>Assets</i>	<i>Liabilities</i>
Real estate.....\$45,000	{ Bonds..... \$20,000
Merchandise..... 34,150	
Cash..... 20,525	
	{ Notes..... 5,000
	{ Capital stock..... 50,000
	{ Surplus..... 20,000
	{ Undivided profits.... 4,675
<u>\$99,675</u>	<u>\$99,675</u>

There are here some new terms to be explained. When a corporation prospers and its assets increase in value, the gain belongs, of course, to the shareholders. To find the total rights of the shareholders, therefore, the rights of outsiders are deducted from the total assets. Thus, from the total assets, \$99,675, is deducted the sum of the bonds and notes, \$25,000; this leaves a difference of \$74,675, the amount of the shareholders' property rights in the corporation's assets. This is more than the original capital stock of \$50,000, because of the gain in the value of the assets. This gain is represented by the two terms, *surplus* and *undivided profits*. The shareholders' rights are thus divided into three parts, (1) capital stock, (2) surplus, and (3) undivided profits.

It is not possible to draw exact and invariable lines separating the meanings of these three terms. As a general rule, the capital stock represents the original and permanent investment of the shareholders in the corporation. Surplus and undivided profits signify the growth in the value of the corporation's assets. Surplus is that portion of the increase which the directors intend to leave more or less permanently in the business, while undivided profits will probably soon be given as dividends to the shareholders. For example, suppose \$4,000 cash were paid out as dividends to the shareholders. Then the statement would be changed so that undivided profits would be \$675; cash, on the other side of the account, would be reduced to \$16,525; and the total of each side would be \$95,675. The important fact is that capital stock, surplus, and undivided profits all represent the property rights of the stockholders and that they differ mainly in the degree of permanence with which they are committed to the corporation's business. The three together make up the total property rights of the shareholders in the corporation. This is called the *capital*.

**Definitions: capital, capital stock, surplus, undivided profits.** — We have, then, the following definitions which will be used in this book and which are generally (though not always) followed by business men: *The capital of a corporation represents the property rights of the shareholders in the assets of the corporation.* The capital may be divided into two or three of the following parts: (1) *The capital stock represents ordinarily the original and permanent investment of the shareholders in the corporation.* (2) *The surplus represents an increase in the capital which it is intended to leave more or less permanently in the business.* (3) *The undivided profits represent an increase in*

*the capital which it is intended to distribute to the shareholders.*

**Other meanings of the terms.** — It will be noted that this idea of capital is different from that defined and used in Chapter XI. We must also be reminded that in ordinary language these terms are not always used exactly as they have been defined. For example, the word "capital" is sometimes used to stand for "capital stock"; when it is so used, people speak of the "capital, surplus, and undivided profits." On the other hand, the terms "capital stock" and "stock" are often used to mean "capital"; i.e., the total right of the shareholders in the corporation. Again, the word "capital" is sometimes used for the total "assets" of a corporation or business man or partnership. If the student clearly understands the meanings of these terms as given in this book, he probably will not be confused by the slightly different meanings which he may later meet.

**Net worth.** — The capital (capital stock and surplus and undivided profits), being found by subtracting the corporation's outside debts from its assets, is the real balancing item, or *net worth*, of the corporation. Capital stock and surplus are usually expressed in round numbers and not changed frequently. The undivided profits item is the one that actually makes the balance and which therefore changes with every new statement and is necessarily expressed each time in the exact number of dollars and cents that will balance the account.

**Par value of capital.** — We must now study the meaning of *par value* and *book value* of capital. *The par value of a share of capital is the value printed or engraved on the stock certificate. It represents (generally, though not always) the amount of money that was originally paid in for one share.* For example, A took five shares in the

Eagle Mercantile Corporation, for which he paid \$500. He received a *certificate* stating that he was the owner of five shares of the capital stock of the Eagle Mercantile Corporation having a par value of one hundred dollars a share.

**Book value.** — *The book value of a share of capital is the value as shown by the corporation's statement.* It may be the same as the par value, or it may be more or less. At the beginning the shares of stock of the Eagle Mercantile Corporation were worth exactly the same as their par value. The par value of all the capital stock was \$50,000, and since the assets of the corporation were worth \$50,000, the shares were worth exactly \$50,000. The book value was the same as the par value.

**Increasing assets.** — But when the assets increased in value, that increased the book value of the shares, since the surplus and undivided profits also belong to the shareholders. The shareholders now own shares worth \$74,675, and that is the book value of all the capital. To find the book value of one share, we simply divide this total by 500 (the number of shares), giving \$149.35 as the book value of a share, whose par value is still \$100.

**Declining assets.** — On the other hand, if the value of the assets should decline, the book value of the stock might become less than the par value. Suppose a fire should destroy the store building and some of the merchandise, so that the statement would read thus:

STATEMENT OF EAGLE MERCANTILE CORPORATION,  
FEBRUARY 1, 1923

<i>Assets</i>		<i>Liabilities</i>	
Land.....	\$25,000	Bonds.....	\$20,000
Merchandise.....	15,000	Notes.....	5,000
Cash.....	<u>20,525</u>	Capital stock.....	<u>35,525</u>
	<u>\$60,525</u>		<u>\$60,525</u>

When assets shrink, we have to make the account balance by reducing the liabilities, first undivided profits, then surplus, and finally capital stock. In this case the stockholders have lost all their undivided profits and surplus and part of their capital stock. The capital is worth only \$35,525, being the difference between the value of the assets and the value of the liabilities due to bondholders and noteholders. The book value of a share is \$35,525 divided by 500, or \$71.05, though the par value is still \$100.

**Par value and book value.** — We see, then, that after a corporation has been in business for any considerable time, the par value of its capital is likely to be much different from the real value. In fact par value very seldom shows the real value of a corporation's capital. Par value is of comparatively little importance in studying the affairs of a corporation. The book value is far more important, since it shows what the stockholder's investment is really worth, provided, of course, that the corporation's statement is a true statement of the facts.

**Market value.** — But what if the assets are not entered in the statement at their real values? This actually happens more often than one would suspect. Let us take an example. Suppose that, after February 1, 1923, the land belonging to the Eagle Mercantile Corporation (see statement on page 103) increases in value and by April 1 becomes worth \$35,000, whereas the other items of assets and liabilities have not changed. If in the corporation's statement for April 1, the land is still listed at the old value, \$25,000, then it will appear that the capital is still worth \$35,525, and that each share is still worth \$71.05. Really they are worth more than the statement indicates. If the statement were a true one, the land would be listed at \$35,000, the total assets

would be \$70,525, and the capital would be \$45,525, or \$91.05 per share. If the facts were known, people would be willing to pay \$91.05 for a share of the stock, regardless of what the statement showed as the book value. *The price at which a share of capital will sell on the market is its market value.* This is the actual value of the share, since it is the amount for which it will be exchanged.

**Market value greater than book value.** — The market value is often different from the book value. In the example just studied it was greater than the book value, for the reason that some of the assets were put down in the statement at less than their true value. This is sometimes the practice of “conservative” business men. They want to be sure that the statement will never show them better off than they really are; they want to be “on the safe side.” They would much rather undervalue their assets than exaggerate them. When this practice is followed the market value of the corporation’s capital will almost always be greater than the book value.

**Stock watering.** — On the other hand the opposite practice is sometimes adopted. Assets are deliberately put down at more than they are worth. Suppose that certain men organized a corporation and put in \$50,000 of money, and that \$40,000 was used by the corporation to purchase certain land believed to contain oil. The directors, wishing to make a good showing, immediately decide to list the land in the corporation’s statement at \$60,000. The statement would then read like this:

## STATEMENT OF GLOBE LAND CO., MAY 1, 1927

*Assets**Liabilities*

Land.....	\$60,000	Capital stock.....	\$70,000
Cash.....	10,000		
	<u>\$70,000</u>		<u>\$70,000</u>

This is not a true statement. The land is really worth only \$40,000. The real value of the capital is only \$50,000, though the statement shows a book value of \$70,000. People who are buying and selling this stock will be likely to know something about the real value of the land, and the market value is likely to be much closer to the real value of \$50,000. The deliberate exaggeration of a corporation's assets is called "stock watering." The term is said to have come from an early practice of farmers driving cattle to market. Just before reaching the place of sale, the shrewd farmer stopped at a stream or watering trough and gave the cattle a good drink. This made them weigh more and he got more for them at the market. This was a profitable "watering of the stock." Unscrupulous corporation promoters sometimes play the same sort of trick when they "water their stock" in the hope of getting better prices from the investing public.

**Market value the real value.** — We see, then, that market value often differs from book value, being sometimes higher, sometimes lower. Just as book value is more important than par value, so market value is more important than book value. The market value is the real value of a corporation's capital, or at least the best approximation to real value that can be found.

**Insolvency.** — When a business is unsuccessful and its assets decline in value, the loss falls upon the owners. Debts to outsiders must be paid, as long as there are any assets left in the business. But suppose the assets decline so greatly that they become less than the debts to outsiders. In this case we say that the business is *insolvent*, meaning that *its assets are less than its liabilities to others than the owners*. All this is true whether the business belongs to an individual, a partnership, or a corporation.

But the results of insolvency are different according to the form of business organization.

**Unlimited liability of individuals and partnerships.** — When an individual business man “fails” and his business becomes insolvent, any property that he owns may be taken to pay his debts. He may lose not only all the capital in his business, but he may have to sell his home, his automobile, or other wealth having no connection with the business. Everything that he owns may be taken, if necessary, to pay his debts. In the same way, when a partnership fails, all the property of each partner may be taken, if necessary to pay the debts of the partnership. A man may have invested only \$5,000 in a partnership, but if it fails and has debts of \$100,000 in excess of its assets, this partner may not only lose the \$5,000 that he invested, but he may have to dispose of a sufficient amount of his private property to pay all the debts of the partnership. If the other partners are not able to pay, he may have to pay the whole \$100,000. It is said, therefore, that individual businesses and partnerships have *unlimited liability*. This is a very great risk, and makes men often unwilling to go into partnerships.

**Limited liability of corporations.** — A corporation has *limited liability*, which means that the amount that the shareholders can be required to give up to meet its debts is *limited*. Thus, if A subscribed or paid five hundred dollars for five shares of stock in an ordinary corporation, he may lose the five hundred dollars, if all the corporation's capital is needed to pay its debts, but he cannot be compelled to pay any more. His private property will not be taken away, no matter how much the corporation may owe. This is one of the chief advantages of the corporation over the partnership. In a partnership a man may lose his whole private fortune because of a reckless or dishonest



partner. Even the individual business man sometimes decides that the risk of losing his private fortune through failure of his business is too great. He then "incorporates" his business, by getting a few persons to join him in forming a corporation. This gives him the advantage of limited liability. The limited liability of stockholders also makes it fairly safe for many people to make investments without the intimate knowledge of those in charge of the business, that would be necessary in the case of a partnership. Though the separate sums so invested are small, their aggregate is a very large amount.

**Double liability.** — The liability of stockholders in a corporation is usually limited to the amount of their investment, as in the example just given. But in some cases, the stockholders may be compelled to put up an additional sum if needed; the additional sum being itself limited, usually to the amount of each stockholder's subscription. Thus, if A subscribed \$500 for five shares of stock he might lose his \$500 and have to put up another \$500. His total loss would then be limited to \$1,000. This is called *double liability*, since each stockholder's liability is limited to double the amount of his investment. The stockholders in national banks in the United States have double liability.

**Dividends.** — *The profits which the shareholders receive from a corporation are called dividends.* They are generally stated as a certain percentage of the capital stock. A five per cent dividend means a dividend equal to five per cent of the capital stock at its par value. Every stockholder would receive five dollars for every hundred dollars of par value of stock which he owned. It makes no difference what the book value or the market value may be. For example, a six per cent dividend of the Eagle Mercantile Corporation would amount to three thousand.

dollars, since that is six per cent of the par value of its capital stock, fifty thousand dollars. Every stockholder would receive six dollars for each share that he owned.

**Interest on bonds and notes.** — The bondholders and noteholders receive *interest*. The corporation agrees to pay them a certain rate of interest, whether its business is prosperous or not. The dividends of the stockholders depend on the profits of the business. The bondholders and noteholders, however, have no voice in the management of the corporation's business. That belongs to the stockholders.

**The stock dividend.** — We have learned that when a corporation's business prospers, its assets generally increase in value, and the book value and the market value of its capital become greater than the par value. In such cases, corporations often increase their capital stock, by giving new shares to all the stockholders in proportion to their present holdings. Let us take an example. The statement of the Eagle Mercantile Corporation on page 100 showed that the book value of the capital was \$74,675. The par value was \$50,000. The directors may now decide to increase the capital stock of the corporation to \$60,000. They will issue \$10,000 of new stock (par value). Since this is one fifth of the present stock (par value), they will give to each stockholder new stock equal to one fifth of the amount of his present holdings. For example, A has five shares of stock; he will receive one new share. The par value of his shares was \$500 (\$100 a share). It is now \$600, since he now has six shares. Such a distribution of new capital stock is called a *stock dividend*. In this example it is a 20% stock dividend, since each stockholder receives new shares equal to 20% (one fifth) of his present holdings.

**Effect on corporation statement.** — How will this transaction affect the corporation's statement? No change has been made in the assets, so that side of the statement remains as it was. On the liability side, the capital stock has been increased from \$50,000 to \$60,000. The surplus is reduced from \$20,000 to \$10,000. None of the other items is changed at all. The new statement reads:

STATEMENT OF EAGLE MERCANTILE CORPORATION,  
JANUARY 1, 1923

<i>Assets</i>		<i>Liabilities</i>	
Real estate.....	\$45,000	Bonds.....	\$20,000
Merchandise.....	34,150	Notes.....	5,000
Cash.....	20,525	Capital stock.....	60,000
		Surplus.....	10,000
		Undivided profits.....	4,675
	<u>\$99,675</u>		<u>\$99,675</u>

We can see that the stock dividend simply means a change from "surplus" to "capital stock" on the statement of the corporation. The capital stock is increased and the surplus is decreased by exactly the same amount. Note that the capital stock no longer represents the *original* investment in the corporation. We have here the entire effect of the stock dividend.

The stock dividend has no effect on the *total* book value of the capital. But, since there are now more shares, the book value of *each share* is affected. Formerly there were 500 shares, and the book value of each share was \$149.35 ( $\$74,675 \div 500$ ). Now there are 600 shares, and the value of each share is found by dividing \$74,675 by 600, giving \$124.45 $\frac{5}{6}$ .

The stock dividend is really not a dividend at all. It takes nothing from the corporation and gives no value to the stockholders which they did not have before. Note the difference between this and the real dividend,

when cash is taken from the assets of the corporation and paid to the stockholders and when both the assets and the liabilities of the corporation are reduced by the amount of the dividend.

**Advantages of the corporation.** — As a form of business organization, the corporation has many advantages. (1) Limited liability is one of the most important. (2) Another is perpetual life. When an individual business man dies, his business has to be closed up or reorganized. When even one member of a partnership dies or withdraws, the partnership ends. If the remaining partners wish to continue, a new partnership must be formed. This causes trouble and expense and injury to the business. A corporation goes on indefinitely, though the individual stockholders may come and go through buying and selling shares of stock. (3) Another advantage of the corporation is that it can unite the capital of a great many people, both rich and poor. There may be hundreds or thousands of stockholders in a single corporation, and their shares may be anything from one dollar up to millions. It would be impossible to have a partnership with any such number of partners or with many such small contributors. It follows that corporations can be much larger than partnerships. The United States Steel Corporation has a capital of over 860 million dollars and more than 165,000 shareholders.

As a result of these advantages the greater part of modern business is now conducted by corporations. Partnerships and individual business men are common, but they are less numerous and on the average much less wealthy than the corporations.

#### EXERCISES

The following is the capital account of a trading corporation:

## STATEMENT OF X. Y. Z. Co., NOVEMBER 1, 1926

<i>Assets</i>		<i>Liabilities</i>	
Land.....	\$ 30,000	Capital stock.....	\$100,000
Store building.....	20,000	Surplus.....	20,000
Merchandise.....	100,000	Undivided profits.....	5,000
U. S. Liberty Bonds....	10,000	Bonds.....	40,000
Cash.....	15,000	Loan from bank .....	10,000
	<u>\$175,000</u>		<u>\$175,000</u>

There are 1,000 shares of the capital. The assets are stated at their true value, except the land, which is really worth \$50,000.

1. What is (1) the par value, (2) the book value, and (3) the probable market value of one share of the capital?

2. Is the corporation solvent or insolvent?

3. Suppose the Liberty Bonds are stolen or lost. Make the necessary changes in the statement. What is now the book value of a share of the stock? What is the probable market value?

4. Suppose, instead, that a 4% dividend is paid. Make the necessary changes in the statement. (In Questions 4, 5, 6, and 8, start with the original statement.)

5. The Liberty Bonds rise in value and become worth \$10,500. Make the necessary changes in the original statement. What is now the book value of a share of the stock? What is the par value?

6. A fire completely destroys the merchandise and the building (no insurance), and the cash is stolen. Make the necessary changes in the original statement. What is the book value of a share of the stock? Is the corporation solvent? What are the bonds now worth?

7. What would the bonds be worth in Question 6 if there were double liability of stockholders of the corporation?

8. A 10% stock dividend is declared. Make the necessary changes in the original statement. Calculate (1) the par value, (2) the book value, and (3) the probable market value of a share of the stock after the stock dividend has been declared.

9. Draw up a statement illustrating stock watering.

10. Name and explain some of the advantages of the corporation as a form of business organization.

References for further study. — Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. I, pages 80-91. Conyngton, T., *A Manual of Corporate Management* (1911).

## PART III. DEMAND AND SUPPLY; PRICE AND VALUE

### ✓ CHAPTER XIV

#### MARGINAL UTILITY

**Importance of exchange.** — As described in Chapter X, division of labor is the rule in modern production. Almost everybody is engaged in making things for other people to use. Likewise practically everything that anybody needs for his own use is made for him by others. How do the products of industry pass from those who make them to those who use them? By trade. Practically all wealth must be bought and sold, often many times over, before it reaches the people who are to use it for the satisfaction of their wants. Even while wealth is being produced it is bought and sold at various stages. The forest owner sells his standing timber to a logger. The logger sells logs to a sawmill owner. The latter sells timber to a builder, who builds a house and sells it to a man who wants it to live in. All of these transactions were necessary just to get the timber for the house. Dozens, or rather hundreds, of other purchases and sales were required to get the bricks, cement, nails, windows, doors, and other parts of the house. In the same way all production requires continual buying and selling; that is, exchange. This makes the subject of exchange very important.

**Introducing "demand and supply."** — Whenever anything is bought and sold, there has to be a price. How

do the prices of things come to be what they are? Why is the price of butter sixty cents a pound and the price of shoes eight dollars a pair? Why are some prices high and others low? Why are all prices higher at some times than at others? Such questions as these can be answered only by the aid of the science of economics. And there is nothing more important in the whole science of economics than the explanation of price. To understand price we must first understand demand and supply. The laws of demand and supply and market price are the most important and also the most difficult part of economics. Almost everything else in economics depends on them. Their mastery will require careful study. But the reward will come when other economic problems, which have appeared difficult and mysterious, are made clear and simple through the understanding of the laws of demand and supply and market price.

**Why do people buy wealth?** The demand for anything comes from buyers. Before we try to define demand, we must learn why people want to buy wealth and what decides the prices they are willing to pay and the quantity of each kind of wealth they are willing to buy.

Of course people buy wealth because they desire it to satisfy their wants. We know this from what we have already learned about the utility of wealth. But whenever anybody buys wealth, he has to give up money in exchange for it. When a person buys anything, therefore, it must be because he wants that thing more than he wants the money which he has to give in exchange. That is, the *utility* to him of the article bought is greater than the *utility* to him of the money spent. But why does a person stop buying? How does he decide how much to buy of any particular kind of wealth? The answers to these questions depend on *the law of marginal utility*.

**Marginal utility.** — We have already learned that man's wants are unlimited in number, but that any one want is strictly limited and may be quickly satisfied. Therefore, the more one has of any particular commodity, the less is his desire for one unit of it. We may measure the utility of anything to any person by the amount of money (that is, the price) that he would be willing to pay rather than go without it. Suppose a company of boys organize a ball team, collect some money, and send their captain to buy their outfit. He must have at least one baseball. The utility of one baseball would be very great. Let us suppose that, rather than go without, he would be willing to pay ten dollars for a baseball if he had to. Then the utility to him of the one baseball is measured by the utility of ten dollars.

But a team is in pretty poor shape with only one baseball. If it should be lost or spoiled, the game would have to stop. The utility of a second baseball would not be so great as that of the first; still it would be very great. The captain would not be willing to pay ten dollars for a second one, but he might pay five dollars for it if that was the best he could do. Then five dollars would measure the utility of a second baseball. The utility of a third would be still less, say three dollars. For a fourth, he might be willing to give two dollars, for a fifth, one dollar and a quarter, for a sixth, seventy-five cents, and for a seventh, fifty cents. Of course the baseballs are all exactly alike, and at any given time the utility of one baseball is just the same as of any other. But the utility of an additional one clearly depends on how many the captain has. If he has none, the utility of one baseball would be ten dollars. If he has one, the utility of another would be five dollars; if he has two, the utility would be three dollars, and so on till if he has



six the utility of an additional baseball would be fifty cents.

This is what is meant by marginal utility. *The marginal utility to any person of anything is the utility to him of one unit more or less of it.* Thus, if the captain had four baseballs, the marginal utility to him of baseballs was one dollar and a quarter, because that price measured the utility to him of one more baseball. If he had six, the marginal utility was fifty cents.

We notice that the more baseballs the captain has, the less is the utility of a single baseball; in other words, the marginal utility of baseballs decreases with each increase in the number he has.

**The law of marginal utility.** — From this example we can discover an economic law, *the law of marginal utility: The marginal utility of anything to any person decreases with every increase in the quantity which he possesses.* It is easy to see that this law holds good of everything we have. If a girl has ten party dresses, a new dress will not mean so much to her as it would if she had only two dresses. The marginal utility of dresses decreases as the number of her dresses increases. Suppose a man needs ten tons of coal to heat his house during the winter. If he had only three tons he would be willing to give a good deal for another ton. The marginal utility to him of coal would be very great. The more tons he had the less he would desire another ton. When he had ten tons, the marginal utility of coal would be quite small, for he would not have much use for another ton. These examples are illustrations of the law of marginal utility.

**Utility and value.** — The law of marginal utility will explain certain facts which are puzzling to many people. How is it that some of the most useful things in the world are so cheap, while other things that satisfy no really

important want are so expensive? For example, a diamond, a mere luxury, may be worth hundreds of dollars, while bread, a prime necessity of life, is worth only ten cents a loaf. To many, this seems strange or even wrong. The explanation is that the value of things depends not on the importance of the wants they satisfy, but upon their marginal utility. The marginal utility of diamonds is very great, because they are rare. Bread is so abundant that its marginal utility is small. Hence people will pay high prices for diamonds but very little for a loaf of bread. Of course the total utility of all the millions of loaves of bread in the world is very great, even though the marginal utility is small.

**Abundance and scarcity.** — Indeed some of the most useful things in the world are so very abundant that their marginal utility is zero. We must have air constantly in order to live. It would be hard to think of anything more useful. Yet no one will pay anything for air. Why not? Because air is so abundant. So long as there is so much air that everybody can have all he wants, its marginal utility is zero and no one will buy it from any one else. Air, the most useful thing in the world, therefore has no value. The only things that have marginal utility and so have value are those that are limited in quantity, so that there is not enough to satisfy everybody's wants. This condition is called *scarcity*. We now see that (1) to have value a thing must have marginal utility, and (2) to have marginal utility a thing must have both utility and scarcity.

**Some further examples.** — We could imagine a case in which air would have value. Some one wrote a story once, based upon a great catastrophe which was exhausting the supply of air on the earth. The men in the story built air-tight houses and machines for compressing and

saving the air, in order to live. In such a state of affairs air was one of the most valuable articles of wealth. Another example is water. In some country districts, where there are plenty of springs and streams, water is free. Everybody may have all he wishes without price. It has no value. But when we move into the city we find that things are different. Here water is scarce. It must be collected at great expense in reservoirs and brought in, often from long distances. It is therefore owned, either by a water company, which sells it to the citizens, or by the city itself. Here water has value. In newly settled parts of the earth land sometimes has no value. There is so much of it that anybody may take whatever land he wishes and still leave plenty to satisfy the wants of others. But this stage quickly passes, and to-day land is almost everywhere one of the most valuable articles of wealth.

**How buyers decide how much to buy.** — The law of marginal utility is important, because it enables us to understand what prices people are willing to pay for things and how much of each thing people are willing to buy. In our examples of the baseball club, we saw what price the captain might be supposed to be willing to pay for a baseball under different circumstances, rather than go without it. But of course every one knows that he would not really pay those different prices for the baseballs he bought. He would not have to pay ten dollars for the first one, nor five dollars for the second, and he would not be able to get a seventh for fifty cents. What really happened was this. The captain went to a store and found that the *price* of baseballs of the kind he wanted was one dollar and a quarter each. He could buy as many as he wanted to pay for at that price. He then had to decide how many to buy. We know that a

person buys anything because the utility to him of that thing is at least equal to the utility of the money he has to pay for it. How many baseballs would the captain buy? We can answer this question from what we know of the marginal utility of baseballs to him. He would certainly buy one, because the utility of that first baseball would be ten dollars, while he would only have to pay one dollar and a quarter for it. In the same way, it would pay him to buy a second, and a third, and so on, till he had bought five. The utility to him of the fifth baseball was just one dollar and a quarter. When he bought that one, he was just getting "his money's worth." Then he would stop. He would, of course, like to have still more, but if he should buy any more, the marginal utility would be less than the price he would have to pay. Therefore he would not buy. For example, a sixth baseball would have a utility to him of only seventy-five cents. It would not pay him to give a dollar and a quarter for it. Therefore, he would buy only five baseballs.

Now let us suppose that the price was one dollar and fifty cents. How many baseballs would the captain buy? It would still pay him to get four. The utility of the fourth baseball was two dollars. But he would not buy the fifth, for he would not be willing to pay a dollar and a half for anything whose utility was only a dollar and a quarter. In like manner, if he had found the price was seventy-five cents, he would have bought six baseballs. We see, then, that the amount bought depends on the price. If we know about the marginal utility of anything to any person and also know its price, we can tell how much of it he will buy.

**The law of individual buying.** — We may state this result in the following law: *A person will buy any com-*

*modity as long as its marginal utility to him is equal to or greater than the utility of the money he has to pay for one unit of it, i.e., the price. He will stop buying when its marginal utility is less than the utility of the price.*

It is important to remember always that whenever a person is deciding whether to buy anything or not, he has to compare two separate utilities, the marginal utility of the thing he thinks of buying and the utility of the price, i.e., the money he will have to pay for it. The utility of the money is, of course, measured by the utility of the other things he could buy with that money. Suppose you have a free afternoon and are trying to decide whether to pay a dollar to go to the theater. You first imagine the satisfaction you would get from the show. Then you think of what you could do with the dollar if you did not spend it for the theater ticket. If you decide that you could get more satisfaction from seeing the show than from anything else that you could get with a dollar, that means that the marginal utility of the show is greater to you than the utility of a dollar, and you will therefore buy the ticket. Otherwise, you will decide not to buy the ticket, because in that case the marginal utility of the show is less than the utility of a dollar.

**The marginal utility of money.** — Money is subject to the same law of marginal utility as any other commodity. That is, the more money one has, the smaller is its marginal utility. This is a matter of everyday observation. When one's pockets are full of money, a dollar looks small. When one has only a few dollars, the utility of a dollar is great. The more money a person has, the more he will be willing to pay for any given commodity; or in other words, the more of any given commodity he will be willing to buy at a given price.

## EXERCISES

1. Can you name any article among your possessions which was obtained without the necessity of any exchange?
2. State and explain carefully an example of marginal utility from your own experience and different from any example given in the textbook.
3. Write a list of ten articles which you own, putting them in the order of their value (or of the price paid for each), the most valuable first. Does this agree with the order of their usefulness to you? Explain.
4. Why do you have to know the price before you can decide whether to buy any particular thing or not? Give an example from your own experience.
5. Why do you have to know the price before you can decide how many units of any particular thing to buy? Give an example from your own experience.
6. What does a person mean when he says, "I can't afford it"?
7. What does it mean, when you decide not to buy a new spring suit because the price is too high?
8. Did you ever feel, after buying something, that you had not "got your money's worth"? If so, what was the real reason for this feeling?

References for further study. — Marshall, A., *Principles of Economics*, Seventh Edition (1916), pages 86-96. Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. I, pages 109-133. Fisher, I., *Elementary Principles of Economics* (1912), pages 278-302. Ely, R. T., *Outlines of Economics*, Third Revised Edition (1916), pages 132-137. Johnson, A. S., *Introduction to Economics*, Revised (1922), pages 24-41. Carver, T. N., *Principles of National Economy* (1921), pages 343-353.

## CHAPTER XV

## THE USE OF SCHEDULES, DIAGRAMS, AND GRAPHS

Economists and business men often have occasion to record certain facts and relations between facts by means of *schedules*, *diagrams*, and *graphs*. These devices are so very helpful to a clear understanding of complicated facts and relations and are coming into such general use that every one ought to understand them and know how to use them. They will be especially useful in our study of demand and supply, and this chapter will therefore be devoted to their study.

**Schedule.** — The *schedule* is the simplest type of statistical table. In it we arrange facts in parallel columns. For example, the following schedule shows the value of gold mined in the United States in each year from 1911 to 1920:

## GOLD MINED IN THE UNITED STATES, 1911-1920

<i>Year</i>	<i>Value of gold mined (in millions of dollars)</i>	<i>Year</i>	<i>Value of gold mined (in millions of dollars)</i>
1911.....	97	1916.....	93
1912.....	93	1917.....	84
1913.....	88	1918.....	69
1914.....	95	1919.....	60
1915.....	101	1920.....	50

**Line chart.** — These facts may be shown very clearly by means of a simple diagram. We draw two lines forming a right angle at the point *o*. On the vertical line, *oy*, we mark off a scale so that the distances above

the point  $o$  measure millions of dollars' worth of gold. The horizontal line,  $ox$ , we mark off into equal spaces to represent the years. Starting at each of the several division points on the base line, we draw a vertical line whose length, as measured by the scale on  $oy$ , represents the value of gold mined in that particular year. The measurement of the lines is made easier by using cross-section paper. This gives us a line chart (Figure 1).

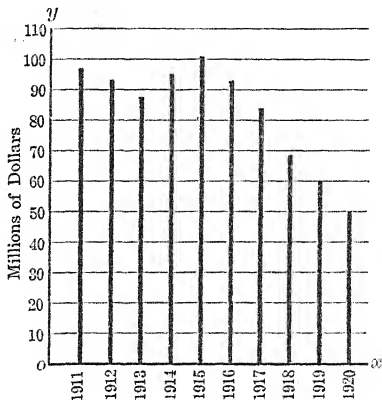


FIG. 1. GOLD MINED IN THE UNITED STATES, 1911-1920

**Block chart.** — Such facts may also be shown by means of a slightly different diagram, called a *block chart* or a *bar chart*. This is shown, for the same facts, in Figure 2 below:

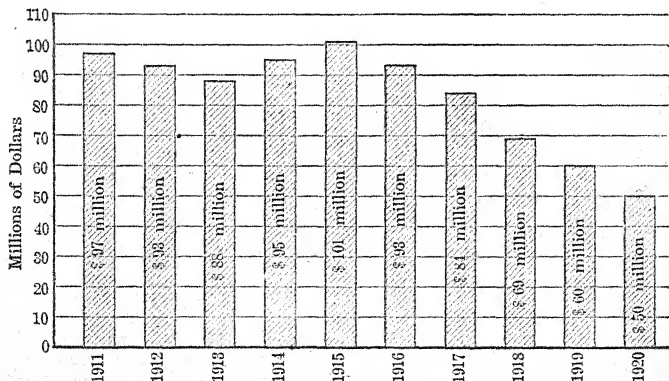


FIG. 2. GOLD MINED IN THE UNITED STATES, 1911-1920



**Another block chart.** — Let us take another example. One of the greatest agricultural products of the United States is cotton; nearly all of it is grown in fifteen states. The following schedule shows the amount produced in each of these states in the year 1920:

COTTON CROP OF THE UNITED STATES, BY STATES, 1920

<i>Year</i>	<i>Bales produced</i>	<i>Percentage of total</i>
Alabama.....	660,000	5.1
Arizona.....	110,000	0.9
Arkansas.....	1,160,000	8.9
California.....	75,000	0.6
Florida.....	18,000	0.1
Georgia.....	1,400,000	10.8
Louisiana.....	380,000	2.9
Mississippi.....	885,000	6.8
Missouri.....	85,000	0.7
North Carolina.....	840,000	6.5
Oklahoma.....	1,300,000	10.0
South Carolina.....	1,530,000	11.8
Tennessee.....	310,000	2.4
Texas.....	4,200,000	32.4
Virginia.....	19,000	.01
Total.....	<u>12,972,000</u>	<u>100.0</u>

A block chart will bring out very clearly the amounts produced in the several states. See Figure 3, at the top of the following page.

**Distribution shown by block chart.** — We may also use diagrams to bring out clearly the percentage of the total cotton crop grown in each state. This is shown, by means of a slightly different kind of block chart, in Figure 4. Notice that the horizontal length of the block is marked off to show percentages from 0 to 100. In this chart, it was found convenient to put the states producing the smaller amounts of cotton (Arizona, Cali-

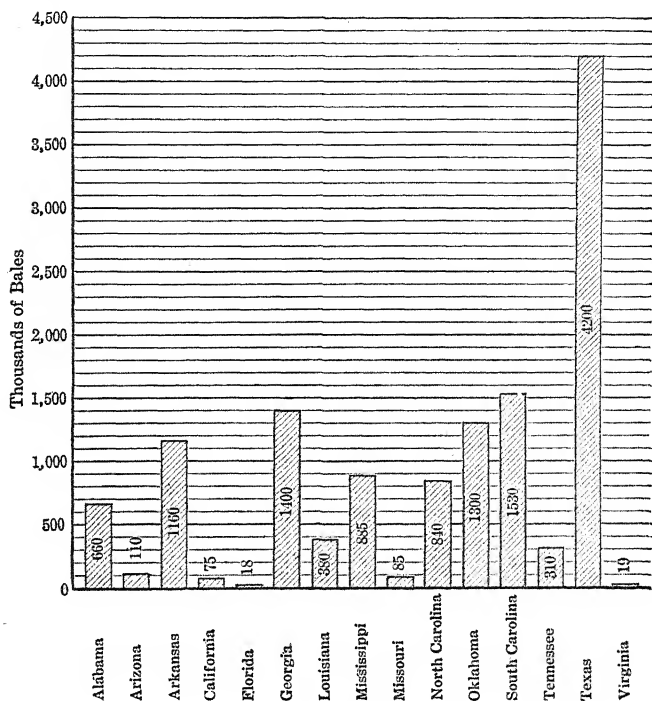


FIG. 3. COTTON CROP OF THE UNITED STATES, BY STATES, 1920

ifornia, Florida, Louisiana, Missouri, Tennessee, and Virginia) together in a single group. In this diagram the states are arranged in the order of the amount of cotton produced, instead of alphabetically as before.

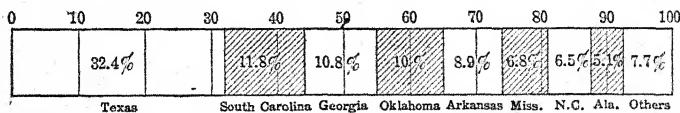


FIG. 4. COTTON CROP OF THE UNITED STATES, BY STATES, 1920. PERCENTAGES

**Circular diagram.** — Another method of showing division into percentages or other parts is by means of a circular diagram, sometimes called the "pie diagram." The cotton production of the several states is thus shown in Figure 5.

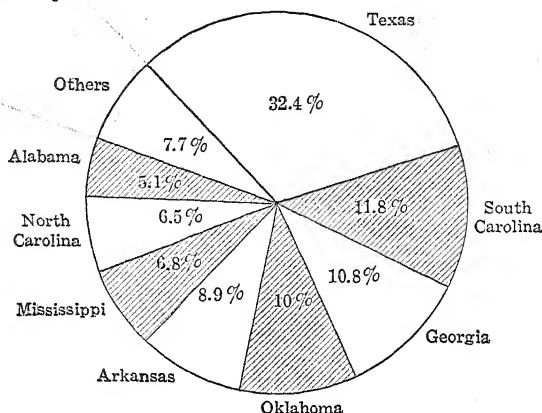


FIG. 5. COTTON CROP OF THE UNITED STATES, BY STATES, 1920.  
PERCENTAGES

**Graph or curve.** — So far we have studied what are called diagrams. Another device is the *graph*. *Graphs*, or *curves*, are used by economists and business men to show in the clearest and easiest way a great multitude of facts and relations. The general idea is the same, whatever is to be shown. We begin by drawing a horizontal line, *ox* (see Figure 6), and a vertical line *oy*, meeting to form a right angle at the point *o*, which we call the *origin*. The two lines are called the *axes*. The line *ox* is called the *x axis*; *oy* is the *y axis*. On each axis we mark off a scale so that we can represent different quantities by the distances above the *x axis* or to the right of the *y axis*.

For example, let us represent the facts of the United States gold production from 1911 to 1920. We start as

in drawing Figure 1 (see page 123). Quantities of gold are measured by the distances above  $o$  on the  $y$  axis. We mark off on  $oy$  a scale in which each space stands for 5 million dollars. Thus the distance from  $o$  to  $r$  represents 30 million dollars;  $os$  measures 65 million dollars, and so on. On the  $x$  axis we mark off a scale, in which each space represents one year, beginning with the year 1911. The gold mined in 1911 was worth 97 million dollars. On the  $y$  axis we locate the point whose distance above the  $x$  axis stands for 97 million; that is the point  $c$ . Then starting at the

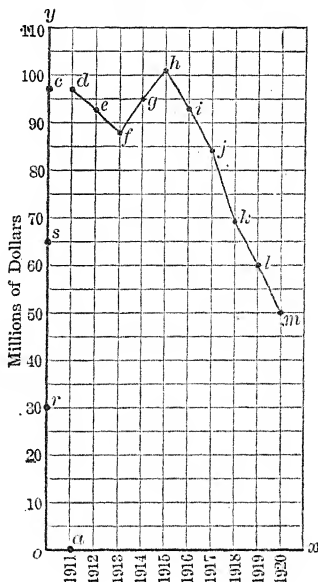


FIG. 6. GOLD MINED IN THE UNITED STATES, 1911-1920

point  $a$  on the  $x$  axis we measure a vertical distance equal to  $oc$ , and so locate the point  $d$ . The point  $d$  thus shows that in the year 1912 the gold production was 97 million dollars. In exactly the same way we locate the points  $e, f, g, h, i, j, k, l$ , and  $m$ , showing the respective amounts produced in the years 1912 to 1920. To get a graph or curve, we have only to connect all these points  $d, e, f$ , etc. This curve shows very clearly the changes in quantity of gold produced from year to year during this decade.

A comparison of Figure 6 with Figure 1 (on page 123) will show that these figures are simply two methods of

showing the same facts. We might have constructed the curve by joining the tops of the vertical lines in Figure 1 and then erasing the vertical lines themselves. The curve simply enables the eye to grasp more readily the comparative quantities of gold produced in the several years. Such curves are convenient in showing the development through a period of time of many kinds of facts, such as the imports and exports of a country from year to year, the rainfall at any locality from month to month or year to year, the temperature by days or hours, number of employees in a business, wages paid, prices, and innumerable other phenomena.

**Another kind of curve.** — A somewhat different use of the curve is to show the relation between certain phenomena at a given time. This may be illustrated by a curve of "expectation of life." The life insurance companies use "mortality tables," which show, among other things, the average duration of life which may be expected by persons of different ages. These tables are based upon statistics gathered from records of many thousands of lives. Of course such tables cannot predict how long any particular individual will live. But they do show how long, on the average, persons have lived in the past after reaching his age, and this average is called the person's probable duration of life or expectation of life. There are several mortality tables in use, differing slightly from one another. The schedule at the top of the following page is taken from what is known as the "American experience table," the mortality table in general use by the American life insurance companies. It shows the expectation of life at each age from ten to ninety-five years.

From this schedule a curve (Figure 7, page 131) is constructed by the same method that was used in drawing Figure 6. This curve does not show a historical

## EXPECTATION OF LIFE (AMERICAN EXPERIENCE TABLE)

Age	Expectation of life	Age	Expectation of life	Age	Expectation of life
10	48.72	39	28.90	68	9.47
11	48.08	40	28.18	69	8.97
12	47.45	41	27.45	70	8.48
13	46.80	42	26.72	71	8.00
14	46.16	43	26.00	72	7.55
15	45.50	44	25.27	73	7.11
16	44.85	45	24.54	74	6.68
17	44.19	46	23.81	75	6.27
18	43.53	47	23.08	76	5.88
19	42.87	48	22.36	77	5.49
20	42.20	49	21.63	78	5.11
21	41.53	50	20.91	79	4.74
22	40.85	51	20.20	80	4.39
23	40.17	52	19.49	81	4.05
24	39.49	53	18.79	82	3.71
25	38.81	54	18.09	83	3.39
26	38.12	55	17.40	84	3.08
27	37.43	56	16.72	85	2.77
28	36.73	57	16.05	86	2.47
29	36.03	58	15.39	87	2.18
30	35.33	59	14.74	88	1.91
31	34.63	60	14.10	89	1.66
32	33.92	61	13.47	90	1.42
33	33.21	62	12.86	91	1.19
34	32.50	63	12.26	92	.98
35	31.78	64	11.67	93	.80
36	31.07	65	11.10	94	.64
37	30.35	66	10.54	95	.50
38	29.62	67	10.00		

development over a period of time as in Figure 6. Its different parts do not relate to different dates, as in Figure 6. What it shows is the relation, at any time, between a person's age and his expectation of life. For example, take any age, say 45 years. From the point *a* on the base line  $ox$ , draw a vertical line meeting the curve at *b* (page 131). From this point, go on a horizontal line to

the  $oy$  axis, locating the point  $c$ , which shows that at the age of 45 the expectation of life is about  $24\frac{1}{2}$  years (24.54, to be exact). Whatever point is taken on the curve, its distance to the right of the  $y$  axis measures an age, while its distance above the  $x$  axis measures the expectation of life corresponding to that age. We may even take a point that was not represented in the schedule. For example, the point  $d$  is directly above  $e$  representing  $22\frac{1}{2}$  years of age, and to the right of  $f$ , which measures  $40\frac{1}{2}$  years on the  $y$  axis. This indicates that at age  $22\frac{1}{2}$  the expectation of life is  $40\frac{1}{2}$  years (approximately). This is reasonable, since we should naturally expect to find the expectation of life for age  $22\frac{1}{2}$  halfway between the expectations for 22 and 23 respectively. Referring to the schedule and calculating this number, gives 40.51. Such determination of quantities not stated in the schedule is called *graphical interpolation*. It may be done with curves showing relations like this one, but usually not with a curve showing a historical series of quantities as in Figure 6.

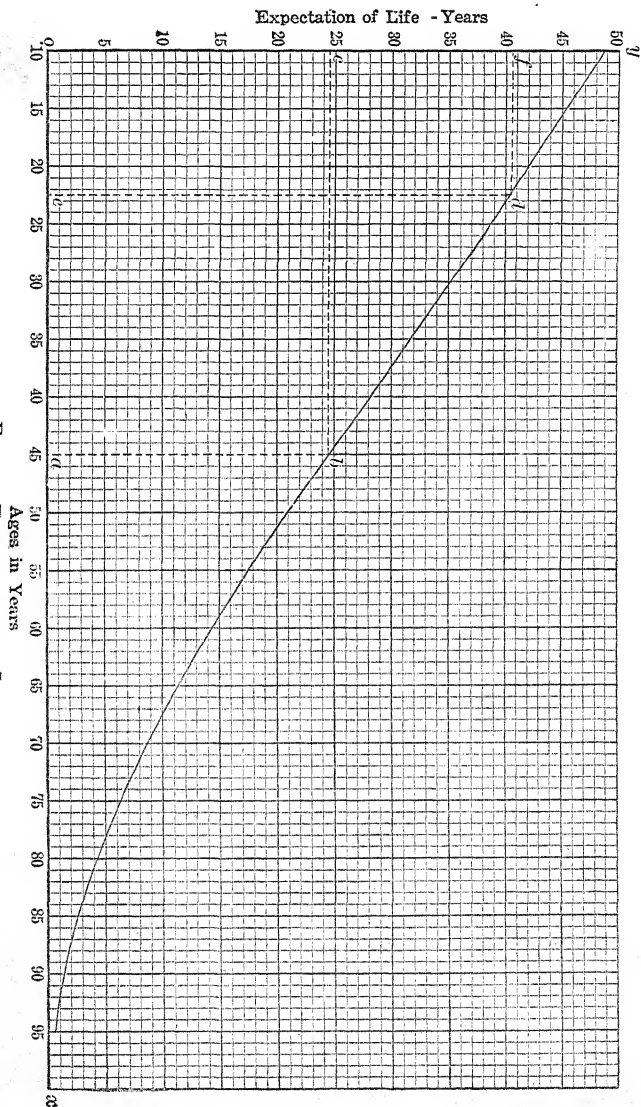
## EXERCISES

1. The production of cotton in the United States from 1907 to 1920 is shown (in millions of bales) in the following schedule:

Year	Bales of cotton (in millions)	Year	Bales of cotton (in millions)
1907 .....	11	1914 .....	16
1908 .....	13	1915 .....	11
1909 .....	10	1916 .....	11
1910 .....	12	1917 .....	11
1911 .....	16	1918 .....	12
1912 .....	14	1919 .....	11
1913 .....	14	1920 .....	13

Show these facts by means of (a) a line chart, (b) a block chart, and (c) a graph or curve.

Fig. 7. EXPECTATION OF LIFE





2. Five men form a corporation and divide the 200 shares of capital stock among themselves as follows (the par value of a share being \$100): A, 20 shares; B, 50 shares; C, 10 shares; D, 90 shares; E, 30 shares. (a) Draw a block chart showing the value of the capital stock belonging to each shareholder. (b) Show the shares of the several shareholders in percentages of the whole, by means of (1) a block diagram, and (2) a circular diagram.

3. The population of the United States (in millions) in 1920 was distributed as follows:

New England states.....	7
Middle Atlantic states.....	22
East North Central states.....	21
West North Central states.....	13
South Atlantic states.....	14
East South Central states.....	9
West South Central states.....	10
Mountain states.....	3
Pacific states.....	6
Alaska, Hawaii, Porto Rico, etc.....	2
Total.....	107

Show the distribution by means of a block diagram of percentages.

4. The population of the United States in each of the census years from 1790 to 1920 was as follows:

Year	Population	Year	Population
1790	3,929,214	1860	31,443,321
1800	5,308,483	1870	38,558,371
1810	7,239,881	1880	50,189,209
1820	9,638,453	1890	63,069,756
1830	12,866,020	1900	77,256,630
1840	17,069,453	1910	93,402,151
1850	23,191,876	1920	107,436,441

(a) Show these facts by a graph, taking account of millions only.

(b) From the graph, find by interpolation the approximate population in 1795 and in 1905.

References for further study. — Secrist, H., *An Introduction to Statistical Methods* (1917), pages 116-233. Hamilton, S., *Essentials of Arithmetic*, Higher Grades (1920), pages 127-131. Van Tuyl, H. H., *Complete Business Arithmetic* (1915), pages 205-208.

## CHAPTER XVI

### DEMAND AND SUPPLY

**The market.** — In any very large city there is a "stock market," a great hall where men gather to buy and sell stocks. There are also in certain cities wheat markets and cotton markets. All over the country there are countless markets, in each of which buyers and sellers are dealing in some particular kind of wealth. *A market for any kind of wealth or service is a place where buyers and sellers exchange that kind of wealth or service.* It is in the market that the price of anything is determined.

Market prices are determined by demand and supply. People constantly talk about "supply and demand," as though everybody knew exactly what these words mean. But, although these are perhaps the two most important words in the whole science of economics, few people really understand their meaning. We must study them very carefully.

**Individual demand.** — If the baseball captain in Chapter XIV, on his way to the store, did not know what he would have to pay for baseballs, he would think the matter out something like this: "If I have to pay more than ten dollars, I won't buy a baseball; if the price is ten dollars, I will buy one; if the price is five dollars, I will buy two; if the price is three dollars, I will buy three; at two dollars, I will buy four; at one dollar and twenty-five cents, five; at seventy-five cents, six; and at fifty cents, seven." At each different price there was a certain number of baseballs which he would buy.

Let us take another example. Mr. Brown goes to town on a certain day (say October 5, 1922) to buy his winter's stock of coal. On his way to the coal market, he thinks it over and decides thus: "I should like ten tons if the price is not over nine dollars a ton. If it is less than that, I might buy a few tons more. If it is higher, I will not buy ten tons. Let me see. If the price is more than fifteen dollars, I won't buy any just now; the price probably will not remain so high very long. If it is fifteen, I'll take two tons. At fourteen dollars a ton, I'll take four tons; at thirteen dollars, six tons; at twelve dollars, seven tons; at eleven dollars, eight tons; at ten dollars, nine tons; at nine dollars, ten tons; at eight dollars, eleven tons; and at seven dollars, twelve tons. The price is pretty sure not to be less than seven dollars."

**The individual demand schedule.** — We can now tell how much coal Mr. Brown would take at each price, the facts being shown in the following schedule:

MR. BROWN'S DEMAND FOR COAL, OCTOBER 5, 1922

<i>Prices</i>	<i>Quantities that would be taken</i>
\$ 7.00.....	12 tons
8.00.....	11 "
9.00.....	10 "
10.00.....	9 "
11.00.....	8 "
12.00.....	7 "
13.00.....	6 "
14.00.....	4 "
15.00.....	2 "
16.00.....	0 "

Each figure in the second column shows the quantity of coal that Mr. Brown would take at the corresponding price; that is, at the price on the same line in the price

column. Such a schedule is called an *individual demand schedule*, and this brings us to an exact statement of of what is meant by *individual demand*. *An individual's demand for any commodity is a schedule of the respective quantities of that commodity which he would be willing to take at all possible prices.* A person's demand for anything may change from time to time. Whenever we speak of demand, therefore, it is necessary to specify a particular time (as October 5, 1922, in the example on page 134).

**Demand and desire.** — Demand is not the same as desire. A hungry tramp with no money desires bread very much, but we cannot say he has a demand for bread, because, no matter what the price, he is not able to buy a single loaf. We may all desire fine automobiles, but that does not mean that the number we desire is our demand for automobiles. The only one who has a demand for automobiles is the person who is able and willing to buy at least one at a price at which automobiles are likely to be for sale. A person's demand for anything is practically always less than his desire, because he could almost always use more than he is willing and able to pay for.

**The individual demand curve.** — The facts of an individual's demand are most clearly shown in the form of a *curve*. For example, in order to show the facts in Mr. Brown's demand schedule for coal, we measure prices by the distances above  $o$  on the  $y$  axis (Figure 8, page 136), and we mark off on  $oy$  a scale in which each space stands for one dollar. Now on the  $x$  axis we mark off a scale on which each space represents one unit, so that we can represent the number of tons of coal by the distances to the right of the  $y$  axis, as measured by the scale on  $ox$ . We now have a diagram (Figure 8) upon

which we could represent the facts of any demand schedule in which prices are given in dollars. Mr. Brown's demand for coal is shown by the curve  $ck$ , constructed

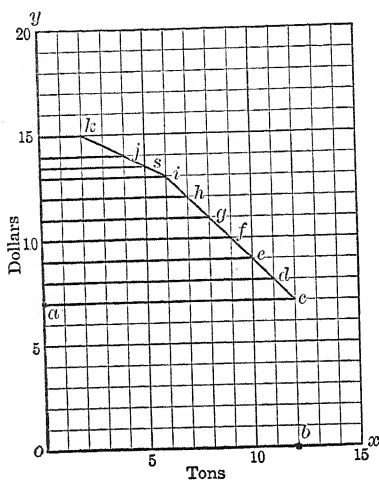


FIG. 8. MR. BROWN'S DEMAND FOR COAL, OCTOBER 5, 1922

according to the method explained in the preceding chapter (pages 126-131).

All demand curves are made in just this way from the corresponding demand schedules. Whatever point we take on a demand curve, its distance above the  $x$  axis represents a price, as measured by the scale on the  $y$  axis, and its distance to the right of the  $y$  axis represents the quantity that would be taken at that price, measured in units according to the

scale on the  $x$  axis. For example, the point  $e$  shows that at nine dollars Mr. Brown would take ten tons. The point  $s$  shows that, as indicated by the diagram, Mr. Brown would take five tons if the price were thirteen dollars and a half.

**Total demand.** — Thus far we have been studying the demand of an individual buyer, for example, Mr. Brown's demand for coal on a certain day. But of course Mr. Brown was not the only person interested in buying coal in that market on that day. There may have been a dozen, or a hundred, or a thousand other men who came to the market on that day to buy coal. Each one had his own demand for coal, that is, a scale of the amounts

which he would be willing to take at various prices. These individual demands would not all be the same. In fact, it is possible that no two of these would be exactly alike. Each man's demand could be represented by a schedule and a curve, as in the case of Mr. Brown. If, now, we could take all the separate individual demand schedules and add them together, it is clear that we would have a schedule of the *total demand* for coal of all buyers in that market. For example, let us take the demand schedules of Mr. Smith and Mr. Jones along with that of Mr. Brown. We can state them in one table as follows:

INDIVIDUAL DEMAND SCHEDULES FOR COAL, OCTOBER 5, 1922				
Prices	Quantities that would be taken by —			
	Mr. Brown	Mr. Smith	Mr. Jones	All three
\$ 7.00.....	12 tons	7 tons	25 tons	44 tons
8.00.....	11 "	6 "	23 "	40 "
9.00.....	10 "	5 "	21 "	36 "
10.00.....	9 "	4 "	20 "	33 "
11.00.....	8 "	3 "	19 "	30 "
12.00.....	7 "	1 "	18 "	26 "
13.00.....	6 "	0 "	17 "	23 "
14.00.....	4 "	0 "	16 "	20 "
15.00.....	2 "	0 "	15 "	17 "
16.00.....	0 "	0 "	10 "	10 "

If these men were the only buyers, then the total demand for coal would be the sum of their three separate demands. Thus the quantity that would be taken at seven dollars a ton is twelve plus seven plus twenty-five; that is, forty-four tons. In the same way we find that forty tons would be taken if the price were eight dollars, and so on for every other price, as shown in the last column in the table. In exactly the same way we would find the total demand, if instead of only three buyers there were three hundred, or three thousand, or any other number of buyers.

**Definition of demand.** — In economics and in practical business we are more interested in total demand than in individual demand. When we use the word *demand* in this book, it will be understood to mean *total demand*, unless otherwise stated. Here, then, is the ordinary definition of *demand*. *The demand for any commodity is a schedule of the respective quantities of that commodity which buyers would be willing to take at all possible prices.* This definition needs no further explanation. In like manner, when we speak of a *demand schedule* or a *demand curve*, we refer to total demand, unless otherwise stated.

**Demand relates to a certain time and place.** — Whenever we speak of demand, or demand schedule, or demand curve, we must have in mind, not only some commodity, but a particular market and a certain time. We cannot talk of demand in general. We must say "the demand for coal," or "the demand for wheat," etc. And we cannot even speak of the demand for wheat in general. Suppose you should ask a wheat merchant, "What is the demand for wheat?" He would answer, "In what market do you mean—Chicago, or London, or where? And when do you mean—right now, or yesterday, or last week? I can tell you that at ten o'clock yesterday morning the demand for wheat in the Chicago market was so and so." The demand for any commodity is different in different markets, and it is different at different times in the same market. Therefore, whenever we talk of the demand for any commodity we must state the particular market and the date to which we refer.

**Demand schedule and curve.** — For example, suppose we are interested in the demand for ice in a certain city, which we will call A, on a certain day, say July 15, 1922. The facts might be shown in a schedule, similar to the following:

## DEMAND FOR ICE, MARKET OF A, JULY 15, 1922

Prices (per hundred pounds)	Quantities that would be taken
40 cents.....	600,000 lbs.
45 ".....	500,000 "
50 ".....	425,000 "
55 ".....	375,000 "
60 ".....	350,000 "
65 ".....	335,000 "
70 ".....	325,000 "
75 ".....	320,000 "

These facts could be shown also by a curve, as follows:

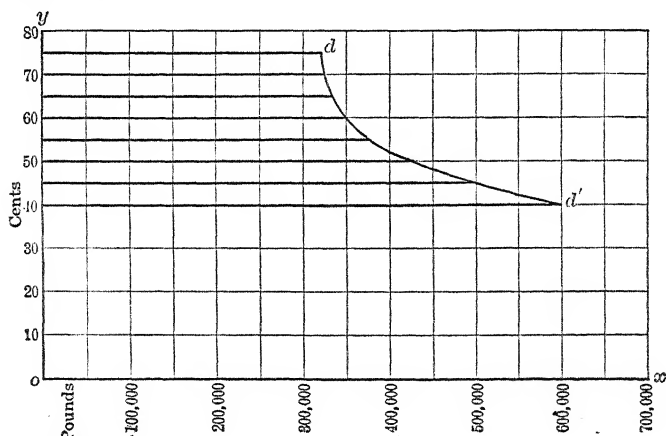


FIG. 9. DEMAND FOR ICE, MARKET OF A, JULY 15, 1922

**Individual supply.** — Supply is like demand in many ways. *An individual's supply of any commodity is a schedule of the respective quantities of that commodity which he would offer to sell at all possible prices.* For example, suppose a farmer has just harvested his wheat crop and starts for town to find out about the market. On the way he thinks the matter over something like



this: "I wonder what they are paying for wheat in the market to-day. If I can get as much as \$1.60 a bushel, I'll sell my whole crop, 5,000 bushels, right off. Even \$1.50 would be a very good price; if I can get that I had better sell most of my crop, say 4,500 bushels. If the price should be \$1.40, I would sell 4,000 bushels. At \$1.20, I won't sell but 2,000 bushels. At \$1.10, I would hold back all my wheat but 1,000 bushels. At \$1.00, I would sell 500 bushels. That is a very low price, but I need some money. If the price is below \$1.00, I won't sell a bushel, no matter how much I need the money."

**Individual supply schedule.** — If this is the state of mind of the farmer, we can make out his *supply schedule* and plot his *supply curve*. The method is exactly the same as used in construction demand schedules and demand curves. The schedule will be as follows:

MR. THOMPSON'S SUPPLY OF WHEAT, AUGUST 10, 1922

<i>Prices</i>	<i>Quantities that would be offered</i>
\$1.00.....	500 bushels
1.10.....	1,000 "
1.20.....	2,000 "
1.30.....	3,000 "
1.40.....	4,000 "
1.50.....	4,500 "
1.60.....	5,000 "

**Individual supply curve.** — The corresponding supply curve is shown in Figure 10 on the following page.

All supply curves are made thus to agree with the corresponding supply schedules. Whatever point we take on a supply curve, its distance above the  $x$  axis represents a price, as measured by the scale on the  $y$  axis, and its distance to the right of the  $y$  axis represents the quantity that would be offered at that price, measured in units according to the scale on the  $x$  axis.

For example, take the point *c*. Its height above *ox* represents \$1.30, while its distance to the right of *oy* stands for 3,000 bushels. That means that at a price of \$1.30 Mr. Thompson would offer 3,000 bushels of wheat, the same fact as is shown on the fourth line of the supply schedule. Again, take an intermediate point *s*. If a

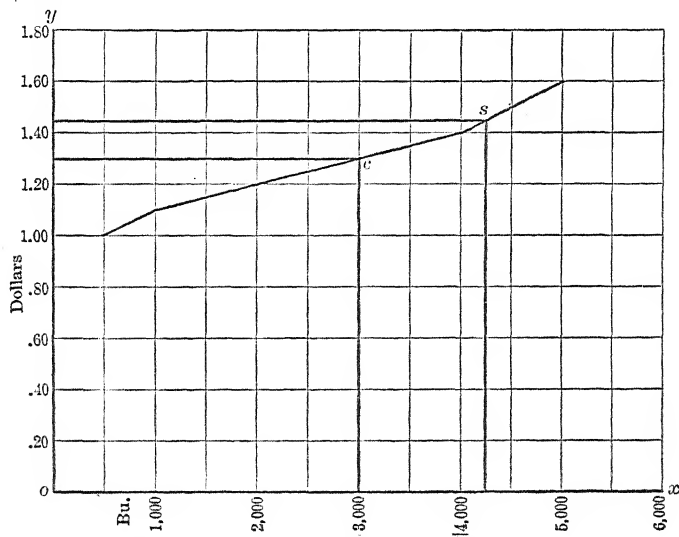


FIG. 10. MR. THOMPSON'S SUPPLY OF WHEAT, AUGUST 10, 1922

horizontal line is drawn from *s* to the axis *oy* and a vertical line from *s* to the axis *ox*, the diagram indicates that at a price of \$1.45, Mr. Thompson would be willing to sell 4,250 bushels of wheat.

**Total supply.** — Of course Mr. Thompson is not the only farmer who comes to this market to sell wheat. There are many others. The sum of all their individual supply schedules will give the schedule of the total supply, in the same way as we found the total demand (page 137).

**Definition of supply.** — We are more interested in total supply than in individual supply, and hereafter when we use the word *supply* we shall mean *total supply* unless otherwise stated. *The supply of any commodity is a schedule of the respective quantities of that commodity which sellers would offer at all possible prices.*

**Supply relates to a particular time and place.** — The supply of any commodity is different in different markets and at different times in the same market. So whenever we speak of supply we must have in mind not only some commodity but a particular market and a certain time.

**Supply schedule and curve.** — Suppose we are interested in the supply of ice in the city A, on July 15, 1922. The facts might be shown in a schedule such as this:

SUPPLY OF ICE, MARKET OF A, JULY 15, 1922

<i>Prices</i> <i>(per hundred pounds)</i>	<i>Quantities that</i> <i>would be offered</i>
40 cents.....	100,000 pounds
45 " .....	200,000 "
50 " .....	275,000 "
55 " .....	325,000 "
60 " .....	350,000 "
65 " .....	375,000 "
70 " .....	400,000 "
75 " .....	425,000 "

The same facts could also be shown in a curve as in Figure 11 on the following page.

**Supply and quantity on hand.** — The supply is not the same as the quantity of goods on hand. For example, our farmer had a quantity of wheat amounting to five thousand bushels. But this was not his individual supply. That was a schedule of the quantities he would be willing to sell at various prices, a very different thing. The amount offered for sale is usually less than the quantity.

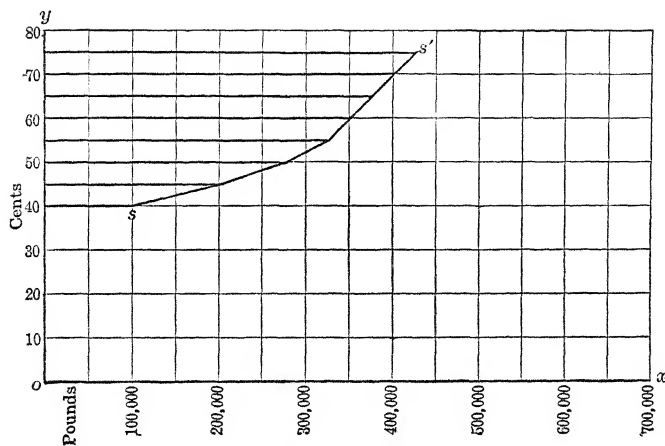


FIG. 11. SUPPLY OF ICE, MARKET OF A, JULY 15, 1922

on hand. But sometimes the amount offered for sale is more than the quantity on hand, as will be explained when we study speculation in (Chapter XXXV).

#### EXERCISES

1. Draw up an imaginary schedule of an individual's demand for some article.
2. Draw the curve corresponding to the demand schedule in the answer to Question 1.
3. Explain the difference between demand and desire.
4. What is the relation between individual demand and total demand?
5. Draw up a schedule representing the supply of some article of common use in your own city, town, or neighborhood. Also draw the supply curve corresponding to that schedule.
6. Explain the difference between supply and quantity on hand.

**References for further study.** — Marshall, A., *Principles of Economics*, Seventh Edition (1916), pages 96-101; 323-330. Fisher, I., *Elementary Principles of Economics* (1912), pages 258-277. Walker, F. A., *Political Economy*, Third Edition (1888), pages 97-100.

## CHAPTER XVII

### THE LAW OF DEMAND AND SUPPLY

**Price and demand.** — Everybody knows that if the price of any commodity is very high, people are not so eager to buy as they would be if the price were lower. If the price is very high, they will buy only a little. If it is low, they will buy more. Suppose that in a certain market the price of eggs is sixty cents a dozen, and suppose the quantity of eggs taken in that market at that price is 500 dozen. Then we know that if instead of sixty cents the price had been seventy cents, the quantity taken would have been less than 500 dozen. Some people would go without eggs for a time rather than pay seventy cents for them, though they were willing to buy some at sixty cents. And there are others who would buy fewer at seventy cents than they would take at sixty cents. So, taking all the buyers together, the amount taken at seventy cents would be less than at sixty cents; let us say, 450 dozen. In like manner, the amount taken would be larger if the price were fifty cents. At that price some people would offer to buy, who could not afford to pay even sixty cents. And many people who were willing to buy certain amounts at sixty cents would take more if they could get them at fifty cents.

**The law of demand.** — Whatever prices we take, the higher the price, the less buyers will take, and the lower the price, the more buyers will take. This is the same thing as saying that the quantity taken varies inversely with the price. We have thus arrived at *the law of demand*,

which is as follows: *Other things being equal, the quantity of any commodity which buyers would be willing to take varies inversely with the price.*

**The law illustrated by the demand curve.**—The demand curve (Figures 8 and 9, Chapter XVI) illustrates clearly the law of demand. As we go along the curve from right to left, the distances that measure prices grow longer, while the distances that measure quantities taken grow shorter. This simply means: the higher the price, the smaller the quantity taken. On the other hand, as we go along the curve from left to right, the distances that measure prices decrease, while those that measure quantities taken increase, which means: the lower the price, the greater the quantity taken. Both of these results must follow as long as the curve slants down as it goes to the right. All demand curves slant down thus; that is, all demand curves are *descending curves*.

**Price and supply.**—Let us turn now to supply. Everybody knows that a high price generally makes people eager to sell, while a low price discourages sellers. Suppose that the price of fine apples in a certain city is six dollars a barrel, and that at that price sellers are offering 200 barrels. We may be sure that if the price were seven dollars, instead of six, more apples would be offered for sale. The dealers would bring apples in from farther back in the country. At a price of six dollars it did not pay to bring apples from so far away. Also at seven dollars farmers would be tempted to sell some apples which they had planned to keep for their own use. The amount offered would therefore be greater at seven dollars than at six. On the other hand, if the price were five dollars, fewer apples would be offered for sale. The farmers would be likely to keep more of their apples for their own use, and farmers living some distance

from town, who could afford to send apples to the city for six dollars a barrel, would find that at five dollars there was no profit left after paying the cost of transportation. The quantity offered would therefore be less.

**The law of supply.** — Whatever prices we take, the higher the price, the greater the quantity offered for sale, and the lower the price, the smaller the quantity offered. This is the same thing as saying that the quantity offered for sale varies directly with the price. And we now have *the law of supply*, as follows: *Other things being equal, the quantity of any commodity offered for sale generally varies directly with the price.*

**The law illustrated by the supply curve.** — The supply curve (Figures 10 and 11, Chapter XVI) illustrates clearly the law of supply. As we go along this curve from left to right both the distances that measure prices and those that measure quantities offered grow longer, whereas both grow shorter as we go from right to left. This simply means that the quantity offered varies directly with the price. It must be true, so long as the curve slants upward as it goes to the right. We call curves that slant upward *ascending curves*. Supply curves are almost always ascending curves.

**Elasticity of demand.** — There are great differences between various commodities as regards the way in which the quantity that buyers will take varies with the price. As we have just learned, the quantity of any commodity that would be taken always increases as the price falls and decreases as the price rises, but these changes are greater and more rapid for some things than for others. For example, suppose the price of milk should rise. Would there be a great decrease in the amount of milk that people would be willing to buy? No. There would be some decrease, but it would be small. The reason

is that everybody must have about so much milk; the amount needed by each person is not large; increasing the price of it would not make a very great difference in the amount each person would spend; and people would prefer to make a little saving somewhere else rather than cut down their regular portion of milk. In the same way, if the price of milk should fall there would not be much increase in the demand. Most people were already getting about as much milk as they wanted, and they would not use much more, no matter how cheap it was. This is true of most of the things called *necessities*. People must have them. If the price goes up, they will still have to buy nearly as much as before. And though the price falls, they do not buy much more than before. Shoes are a necessity. The price of shoes increased very much during the World War. But people had to have shoes, and the quantity bought did not decrease very much. When the quantity of a commodity that is bought does not change much with changes in price, it is said that the demand for that commodity is *inelastic*.

The opposite is true of *luxuries*, or things which people do not have to have. If the price goes up, people will be able to use less or go without. Therefore a rise in price quickly causes a great decrease in the quantity taken. If the price falls, people can enjoy luxuries which they could not afford before, and there is quickly a large increase in the quantity taken. A fall in the price of pleasure automobiles causes a great increase in the purchases. If the price goes up, other things being equal, the buyers will not be willing to take nearly so many. The demand for luxuries is *elastic*, because changes in price cause large changes in the quantities taken.

**Elasticity of demand illustrated by demand curves.** — By drawing demand curves we shall see clearly the differ-



ence between elastic and inelastic demand. Suppose in a certain town the weekly demand schedules for milk and for a certain kind of chocolate candy are as follows:

DEMAND FOR MILK		DEMAND FOR CANDY	
<i>Prices</i>	<i>Quantities</i>	<i>Prices</i>	<i>Quantities</i>
10 cents	10,000 quarts	30 cents	500 pounds
11 " "	9,800 "	40 " "	400 "
12 " "	9,600 "	50 " "	300 "
13 " "	9,400 "	60 " "	200 "
14 " "	9,200 "	70 " "	135 "
15 " "	9,000 "	80 " "	75 "

The corresponding demand curves are as below:

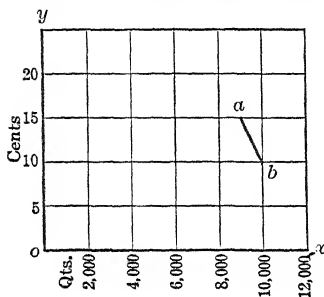


FIG. 12. DEMAND FOR MILK

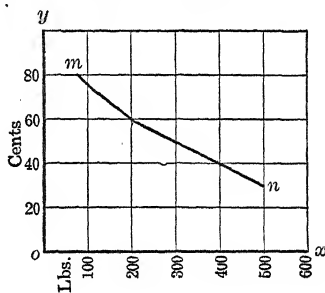


FIG. 13. DEMAND FOR CANDY

Notice the difference between these two curves. The curve *ab* for milk descends rapidly; it is very steep. The curve *mn* for chocolate candy descends slowly; it is less steep. Milk is a necessity, with an inelastic demand. Chocolate candy is a luxury, with an elastic demand. Elastic demand curves descend slowly; inelastic demand curves descend rapidly. We can always tell how elastic the demand for any commodity is by noticing the steepness of its demand curve.

**Elasticity of supply.** — Commodities also differ as to the elasticity of supply. The quantity of certain things

offered for sale is greatly increased by an increase in price and declines greatly when the price falls. Such commodities have an *elastic supply*. Manufactured articles generally have an elastic supply. If the price of automobiles rises, the manufacturers quickly increase the number of cars for sale. If the price falls, manufacturers cut down their production or go out of business, and the quantity offered declines greatly.

Other things, such as many raw materials, have an *inelastic supply*. The quantity offered does not vary so much or so quickly with changes in price. The supply of coal, for example, is rather inelastic.

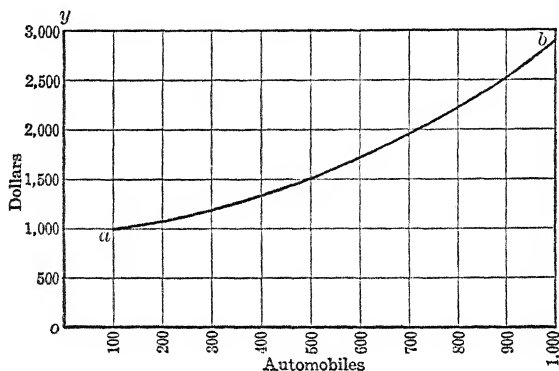


FIG. 14. SUPPLY OF AUTOMOBILES

**Illustrated by supply curves.** — Figures 14 and 15 represent the supply curve of a certain grade of automobile and the supply curve of coal in a certain place. The elasticity of the supply is shown by the steepness of the two curves. The curve for automobiles rises slowly as it goes from left to right. It is not very steep. This is because automobiles have an elastic supply. Elastic supply curves rise slowly; they are not very

steep. On the other hand, the supply curve of coal rises rapidly. It is steep, because the supply of coal is inelastic. Inelastic supply curves rise rapidly; they are steep.

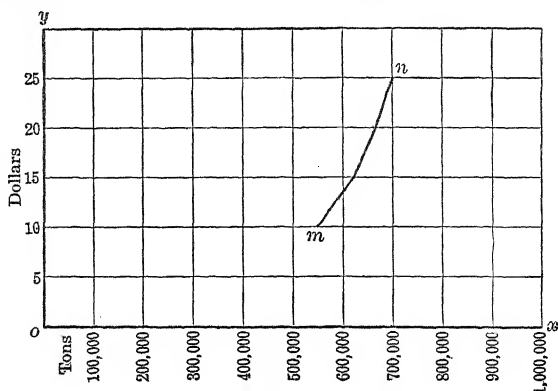
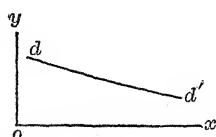
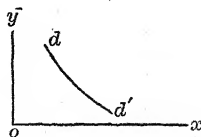
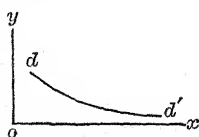


FIG. 15. SUPPLY OF COAL

## EXERCISES

1. State and explain the law of demand. Why do all demand curves slant down as we go from left to right?
2. State and explain the law of supply. Why do supply curves generally slant upwards as we go from left to right?
3. Here are three demand curves. Do they represent elastic or inelastic demands?



4. Name five articles having an elastic demand, and explain each.
5. Name five articles having an inelastic demand; explain each.

References for further study. — Marshall, A., *Principles of Economics*, Seventh Edition (1916), pages 102-116. Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. I, pages 134-142.

## CHAPTER XVIII

### THE LAW OF MARKET PRICE

**Demand and supply brought together.** — Thus far we have been studying demand and supply separately. We are now ready to bring them together and learn how *market price* is determined. For an example, take the ice market of the city A, which has already been used in studying demand and supply. Figure 16 is based on

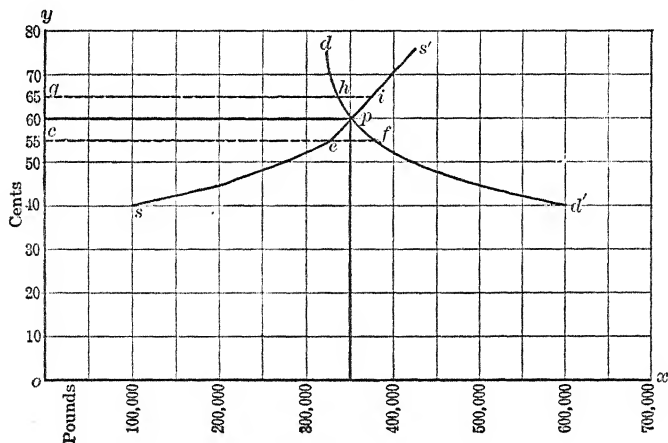


FIG. 16. DEMAND AND SUPPLY OF ICE, MARKET OF A, JULY 15, 1922

the same facts as Figures 9 and 11 in Chapter XVI, but here we have both curves on the same diagram.

The curve  $ss'$  shows the supply of ice at a certain time. The curve  $dd'$  is the demand curve for ice at the same time. At the point  $p$  these two curves intersect. What does this mean?

The price at which quantities offered and taken are equal. — First of all, the point  $p$  represents the same price on both curves. Whether we are considering the supply curve  $ss'$  or the demand curve  $dd'$ , the point  $p$  stands for a price of 60 cents. Notice also that at this price, represented by  $p$ , the quantity offered and the quantity taken are equal; i.e., 350,000 pounds. Again, this point stands for the only price at which these quantities can be equal. For example, at a price of 55 cents, the quantity offered,  $ce$ , is less than the quantity taken,  $cf$ , and this would be true of any price less than 60 cents. On the other hand, at a price of 65 cents, the quantity offered,  $gi$ , is greater than the quantity taken,  $gh$ , and this would be true of any price greater than 60 cents. Sixty cents is the only price at which the quantity offered and the quantity taken are equal.

The price at which exchanges take place. — Now this particular price is different from any other price and is very important. In a perfect market, where buyers and sellers meet and have full knowledge of all the conditions of demand and supply, this is the only price at which any considerable amount of the commodity will be exchanged. Any purchaser who ignorantly offered to pay more than this price would find all the sellers rushing to sell to him and would soon see that he need not offer so much. Any purchaser who offered less than this price would find no one willing to sell to him. In like manner, a seller who offered to sell for less than this price would be swamped with buyers, and would raise his price; while one who asked more would find no one to whom he could sell. Buyers will not pay more than this price; sellers will not sell for less, with the demand and supply as assumed.

The price that clears the market. — We also see that

at this price all sellers are able to dispose of all of the commodity that they are willing to sell (at that price) and that buyers are able to get all they want to pay for (at that price). As business men say, this price is the one that "clears the market." In our example, no seller who was willing to take 60 cents is left with an unsold stock, and no buyer who was willing to pay 60 cents has to go unsatisfied. This is the only price of which these statements would be true.

**Market price.** — This price is called the *market price*. *The prevailing price at which any commodity is actually bought and sold on the market, is the market price.* This is the price that clears the market. It is likewise the price at which the quantity offered for sale is equal to the quantity that buyers are willing to take. It is thus determined by demand and supply, as indicated by the point at which the curves of demand and supply intersect each other. We set out to learn how prices are determined, and we have now discovered the first part of *the law of market price*. *Market price is determined by demand and supply and is the price at which the quantity which buyers are willing to take is equal to the quantity offered by sellers.* Demand and supply thus determine, not only the market price, but also the quantity of goods exchanged.

**Changes in market price.** — We have learned that, in a given market at any given time, any commodity has a certain demand and a certain supply, which determine a certain market price, at which a certain amount of the commodity is bought and sold. We must now find out how the market price can change from time to time. It is clear (see Figure 16) that there cannot possibly be any other price, with those particular demand and supply curves, because that is the only price at which

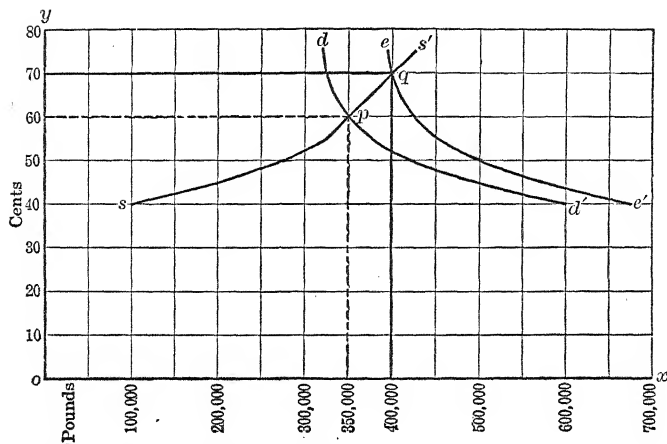
the quantities offered and taken are equal, or the only point at which the curves can intersect. *The only way market price can change is by a change either in the demand or in the supply or in both.*

**Effect of an increase in demand.** — Let us study the effect of a change in the demand or in the supply. We can still use our illustration of the ice market in A. We assumed that on a certain day (July 15, 1922) the demand for ice — that is, the amounts people would be willing to buy at various prices — was as stated in a certain schedule and curve. This was the demand for ice in that market on that day. This demand will not necessarily remain the same. Next week or next month it will very likely be different. Let us suppose that the weather becomes unusually hot. People need a good deal more ice than they did before. At any price, the amount they would be willing to buy will therefore be greater than before. That will be a new demand, represented by a new schedule and a new curve. We will repeat the old schedule and suppose the new schedule to be as stated in the third column below:

## DEMAND FOR ICE, MARKET OF A

<i>Prices</i> (per 100 pounds)	<i>Quantities</i>	
	<i>July 15, 1922</i>	<i>August 15, 1922</i>
40 cents	600,000 pounds	675,000 pounds
45 "	500,000 "	575,000 "
50 "	425,000 "	500,000 "
55 "	375,000 "	450,000 "
60 "	350,000 "	425,000 "
65 "	335,000 "	410,000 "
70 "	325,000 "	400,000 "
75 "	320,000 "	395,000 "

The corresponding demand curves,  $dd'$  and  $ee'$ , are shown on the following page (Figure 17).

FIG. 17. INCREASED DEMAND FOR ICE ( $ee'$ ), MARKET OF A

When conditions of demand change so that there is a greater demand for any commodity, this means that at practically every price the amount that people would be willing to buy is greater than it was before. This is illustrated by a new demand curve farther to the right than the old curve. This is what business men mean when they say, for example: "The demand for cotton is greater this week," or "There is a very strong demand for coal."

We must now ask, what is the effect on the market price of an increase in demand? We will assume that the supply has not changed. Referring to Figure 17, we see that the supply curve  $ss'$  is the same as before, but the new demand curve intersects the supply curve at a different point  $q$ , which is farther to the right, and therefore farther up from the line  $ox$ . This means that there is a new market price. The old market price was 60 cents, determined by the intersection of the demand and supply curves at  $p$ . Now the demand and supply



curves intersect at  $q$ , which means that at a price of 70 cents the quantities offered and taken are equal, each being 400,000 pounds. The market price, therefore, is 70 cents, and the amount of ice bought and sold is 400,000 pounds. This proves the law that *other things being equal, an increase in demand causes an increase in market price.*

**Effect of a decrease in demand.** — In the same way we can see that *other things being equal, a decrease in demand causes a decrease in market price.* Let us suppose that the hot spell lasts a week and then the weather changes. People reduce their purchases of ice but still use more than they did before the hot season started. Let us suppose the demand schedule on August 22, to be as follows:

DEMAND FOR ICE, MARKET OF A, AUGUST 22, 1922

<i>Prices</i> (per 100 pounds)	<i>Quantities</i>
40 cents	650,000 pounds
45 "	550,000 "
50 "	475,000 "
55 "	425,000 "
60 "	395,000 "
65 "	375,000 "
70 "	360,000 "
75 "	350,000 "

In Figure 18 we have the corresponding demand curve,  $ff'$ ; also the demand curve  $ee'$ , as it was a week earlier, August 15, and the supply curve  $ss'$ , which we will suppose is still the same as it has been. Evidently the new demand curve is farther to the left than it was. It intersects the supply curve at a new point  $r$ , which shows that the market price is now 65 cents and that the quantities offered and taken are equal at 375,000 pounds, which is the amount that will be bought and sold on

this day. This is proof that a decrease in demand has caused a decrease in price.

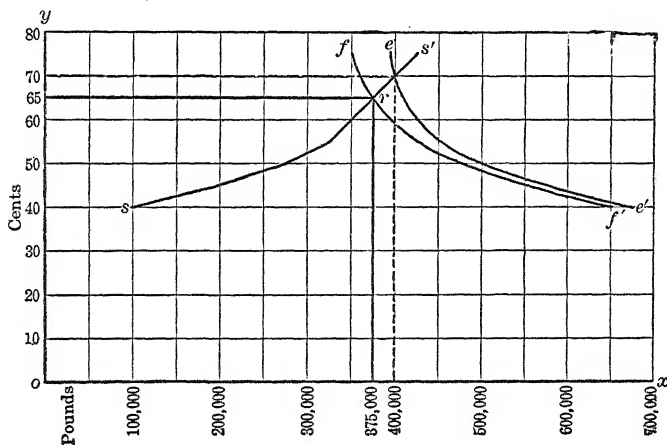


FIG. 18. DECREASED DEMAND FOR ICE ( $ff'$ ), MARKET OF A

**Changes in supply.** — How is the market price affected by changes in the supply? Conditions of supply do not remain unchanged any more than those of demand. For example, during the World War the world's supply of sugar ran short, and people suddenly found that the amount of sugar that could be bought at any price was less than before. That is, there was a different supply of sugar, to be represented by a new supply schedule and a new supply curve. On the other hand, a new invention will often cheapen the cost of producing some commodity so that the amount offered for sale at any price will be greatly increased. That means an opposite change in the supply and in the supply schedule and the supply curve.

**Effect of a decrease in supply.** — Going back again to our illustration of the ice market in A, we had a certain

schedule and a certain curve that showed the condition of supply on a certain date, July 15, 1922. But this condition may change at any time. Let us assume that some of the ice sold in A has to be brought in by rail from ice houses at some distance. Now suppose a strike should tie up the railroad so that ice could not be brought into the town as usual. The ice men would find their stocks running low. They would try to make their stocks last so as to supply their customers, and they would also be tempted to hold out for a higher price. The result would be that they would be less eager to sell. At any given price the amount of ice they would offer for sale would be less than before. There would thus be a different supply, represented by a new supply schedule and a new supply curve. Let us suppose the new schedule to be as shown in the third column of the table below. In the second column we have repeated the old schedule.

SUPPLY OF ICE, MARKET OF A		
<i>Prices</i>	<i>Quantities</i>	
(per 100 pounds)	July 15, 1922	July 29, 1922
40 cents	100,000 pounds	80,000 pounds
45 "	200,000 "	160,000 "
50 "	275,000 "	235,000 "
55 "	325,000 "	285,000 "
60 "	350,000 "	310,000 "
65 "	375,000 "	335,000 "
70 "	400,000 "	350,000 "
75 "	425,000 "	360,000 "

The corresponding supply curves,  $ss'$  (as on July 15) and  $tt'$  (as on July 29), are shown on the following page (Figure 19).

When conditions of supply change so that there is a smaller supply of any commodity, this means that at every price the amount offered for sale is less than before.

This is illustrated by a new supply curve farther to the left than the old curve. This is what people mean when they say, for example: "The supply of wheat is very low to-day," "There is a shortage in the butter supply," etc.

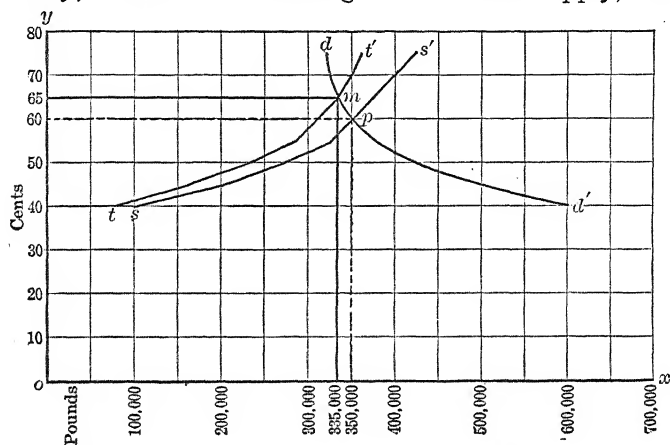


FIG. 19. DECREASED SUPPLY OF ICE ( $u'$ ), MARKET OF A

Let us now see how the market price is affected by a decrease in the supply. We assume that, while the supply has been changing, there has been no change in demand, which is still represented by the curve  $dd'$  as before (Figure 19). Notice, however, that the new supply curve  $u'$  intersects the demand curve at a new point,  $m$ , farther to the left and therefore farther up than the point  $p$  at which the old supply curve intersected the demand curve. This means that there is a new market price. On July 15, the price was 60 cents. Now the price is determined by the point  $m$ , since at that price the quantities offered and taken are equal, each being 335,000 pounds. The price, therefore, is now 65 cents, and the amount of ice bought and sold is 335,000 pounds. This proves

the law that *other things being equal*, a decrease in supply causes an increase in price.

**Effect of an increase in supply.** — *Other things being equal, an increase in supply causes a decrease in price.* This law is proved in much the same way as the converse. Let us suppose that after a week the railroad strike is settled and ice comes into the market of A in greater quantities than ever before. The ice men will find it easy to replenish their stocks and will be glad to sell. The result will be a new supply schedule which we will suppose to be as follows:

SUPPLY OF ICE, MARKET OF A, AUGUST 5, 1922

Prices (per 100 lb.)	Quantities	Prices (per 100 lb.)	Quantities
40 cents	120,000 pounds	60 cents	410,000 pounds
45 "	250,000 "	65 "	445,000 "
50 "	325,000 "	70 "	460,000 "
55 "	375,000 "	75 "	475,000 "

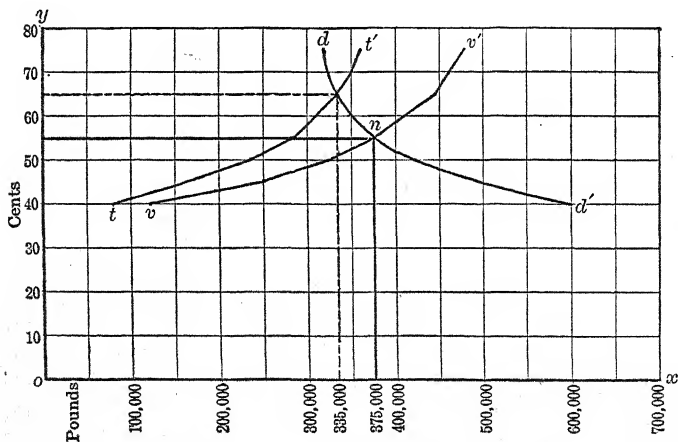


FIG. 20. INCREASED SUPPLY OF ICE ( $v'$ ), MARKET OF A

In Figure 20 we have the corresponding supply curve  $vv'$ ; and also the supply curve  $tt'$ , as it was the week before, July 29, and the demand curve,  $dd'$ , which we will suppose is still unchanged. The new supply curve is evidently farther to the right than before. It intersects the demand curve at a new point  $n$ , which shows that the market price is now 55 cents and the quantities offered and taken are equal at 375,000 pounds, which is the amount sold. This proves that an increase in supply causes a decrease in price.

We have now learned the effects on price of (1) an increase in demand, (2) a decrease in demand, (3) a decrease in supply, and (4) an increase in supply. These are all the possible changes in the amount of demand and supply, and we may combine the results in one sentence, as follows: *Other things being equal, a change in the size of the demand causes a similar change in price; a change in the size of the supply causes an opposite change in price.* This is the second part of the *law of market price*.

**Summary.** — We have now found the answer to the question: How are prices determined? Let us sum up the several steps by which we reached the answer:

1. *Definition of market.* A market for any kind of wealth or service is a place where buyers and sellers exchange that kind of wealth or service. (See Chapter XVI, p. 133.)

2. *Definition of demand.* The demand for any commodity is a schedule of the respective quantities of that commodity which buyers would be willing to take at all possible prices. (See Chapter XVI, p. 138.)

3. *Definition of supply.* The supply of any commodity is a schedule of the respective quantities of that commodity which sellers would offer at all possible prices. (See Chapter XVI, p. 142.)

4. *The law of demand.* Other things being equal, the quantity of any commodity which buyers would be willing to take varies inversely with the price. (See Chapter XVII, p. 144.)

5. *The law of supply.* Other things being equal, the quantity of any commodity offered for sale varies directly with the price. (See Chapter XVII, p. 146.)

6. *Definition of market price.* The market price of any commodity is the prevailing price at which that commodity is actually bought and sold on the market. (See Chapter XVIII, p. 153.)

7. *The law of market price.* (a) Market price is determined by demand and supply and is the price at which the quantity which buyers are willing to take is equal to the quantity offered by sellers. (See Chapter XVIII, p. 153.)

(b) Other things being equal, a change in the size of the demand causes a similar change in price; a change in the size of the supply causes an opposite change in price. (See Chapter XVIII, p. 161.)

### EXERCISES

1. Here are the demand and the supply schedules for sugar in a certain city on a certain day:

Prices	Quantities that would be	
	taken	offered
4 cents	700 pounds	100 pounds
5 "	600 "	200 "
6 "	500 "	300 "
7 "	450 "	350 "
8 "	400 "	400 "
9 "	350 "	450 "
10 "	325 "	500 "
11 "	300 "	550 "

(a) Draw the corresponding demand and supply curves. (b) What is the market price of sugar? (c) Why can the price not be higher?

(d) Why can the price not be lower? (e) What do people mean when they say, "Supply and demand are equal"? Is it a correct statement?

2. What circumstance might cause the demand for sugar to increase? Draw up a new schedule showing an increase in the demand.

3. Draw the demand curve corresponding to the schedule in the answer to Question 2, and on the same diagram draw the supply curve (assuming there has been no change in supply). What is now the market price?

4. What circumstances might cause the demand for sugar to decrease? Draw up a new schedule showing a decrease in the demand.

5. Draw the demand curve corresponding to the demand schedule in the answer to Question 4, and on the same diagram draw the supply curve from the answer to Question 1 (a). What is now the market price?

6. Assuming demand as in Question 1, draw up a new supply schedule showing an increase in the supply. Draw the demand curve and the new supply curve and determine the new market price.

7. Assuming demand as in Question 1, draw up a new supply schedule showing a decrease in the supply. Draw the demand curve and the new supply curve and determine the new market price.

**References for further study.** — Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. I, pages 142-145. Johnson, A. S., *Introduction to Economics*, Revised (1922), pages 41-48. Fisher, I., *Elementary Principles of Economics* (1912), pages 258-277. Marshall, A., *Principles of Economics*, Seventh Edition (1916), pages 331-336.



## CHAPTER XIX

### COST OF PRODUCTION AND SUPPLY. COMPETITION

What is back of supply? — We have now learned how the prices of things are determined by demand and supply. Before that, we had learned (Chapter XIV) how the demand for wealth and services is based upon the law of marginal utility. In this chapter we shall study what is back of supply.

How do sellers know what prices to ask? — Of course a person sells anything because he desires the money he can get for it more than he desires the thing itself. That is, the seller compares the utility of the thing and the utility of the money he can get for it (its price), just as the buyer does. But there is this important difference. Most people buy things because they want to use them to satisfy their own wants. Most sellers, on the other hand, are not selling things that they would ever use themselves. They are in the business of selling, on account of the profits they can make at it. For example, when you buy a suit of clothes, you buy it to wear. But the merchant who sold it to you had no idea of wearing that suit. He sells hundreds of suits every year which he never expected to wear. How do the merchants determine the utility of the things they sell? How do they decide the prices at which they would be willing to sell, or the quantities they would be willing to sell at different prices?

If one should ask a storekeeper this question, he would answer something like this: "The prices I ask depend on

what it costs me to get the goods and run my store. I have to buy my goods from the manufacturers or the wholesalers. I have various expenses for running my store. I have to charge prices for my goods high enough to cover all my costs and give me a reasonable profit." The chief cost of a merchant is what he pays for his goods. To understand supply, then, we must go on and ask what determines the prices at which the wholesalers and the manufacturers are willing to sell. And since the wholesalers must themselves buy of the manufacturers, our first problem is to find out how the supply of goods offered for sale by the manufacturers is determined.

**Competition defined.** — The solution depends on whether goods are produced under conditions of competition or monopoly. We shall study first competition. Monopoly will be taken up in the next chapter. *Competition is that condition in which (1) rival sellers are seeking to sell to the same person or persons, or (2) rival buyers are seeking to buy from the same person or persons; each seller or buyer acting independently in his own interest without regard to the interests of other sellers or buyers.* There is competitive production of a commodity or service when there are two or more independent producers in competition with one another.

**Cost of production determines supply.** — In competitive production, the supply of the product depends mainly upon the *cost of production*. No wealth or service can be produced without labor and other costs. No one is willing to produce unless the price he receives is enough to pay all the costs. Among the costs of production the principal items are wages paid to laborers, costs of materials, certain rents, interest on the capital employed, and finally sufficient profits to make it worth while for the employer to run the business. It may seem strange at

first to call profits part of the cost of production. But it is clear that no man will undertake to run a business unless he can make at least as much for himself as he could earn in salary or wages by hiring out to an employer. We must have employers in charge of business enterprises or there would be very little production. Hence, enough profits to induce such men to undertake the management of business enterprises must be counted among the necessary costs of production.

Producers, then, will supply goods to the market only at prices at least sufficient to cover all the costs of production. But can the price be higher than this? No, not if there is competition. Suppose that it costs \$50 to make a certain grade of bicycle, and that there are several manufacturers making and selling the bicycles in competition. Each maker tries to sell as many bicycles as possible in order to increase his profits. He knows that the one sure method of attracting buyers away from his competitors is to make his price lower than theirs. As a result each manufacturer makes his price as low as he can and still pay all his costs, including, of course, a profit sufficient to induce him to stay in the business. And any manufacturer who tried to charge more than the cost would find that nobody would buy of him. So the price at which all the producers are offering to sell will be \$50, or the cost of production (including the normal profit).

What we have learned about the producers or manufacturers is just as true of those who buy wealth in order to sell it to others, the dealers, wholesalers, jobbers, retail storekeepers, etc. Each of them has to buy his goods from some one else and pay enough to cover that person's costs. Then the dealer has his own costs — wages, rent, interest, and expenses of keeping up

his store. When he sells the goods he must get enough more than he paid for them to cover these costs and give him a normal profit. Otherwise he would not stay in the business. And he cannot charge more than the cost for any long time, because if he does his competitors will undersell him and take his customers away. So the dealer offers goods at prices equal to the cost, just as the original producer does.

We see, then, that in competitive production the producers and dealers will offer to sell goods only at prices which will cover their costs; or, in other words, the amounts of goods which they will offer to sell on the market at different prices are the amounts for which those prices will just cover the cost of production. Cost of production, then, is what really determines supply, just as utility determines demand.

**Cost depends on amount produced.** — The cost of production, however, generally depends on how much is being produced. A farmer finds that he can raise 1,000 bushels of wheat on his farm at a cost (including a satisfactory profit to himself) of \$1.20 a bushel. If he should try to raise 1,100 bushels, the extra 100 bushels would cost, say \$1.25 each. He could raise another 100 bushels at a cost of \$1.30, and so on. That is, after a certain point has been reached, the more wheat he raises, the greater is the cost per bushel. The reason for this is the *law of diminishing returns*, another of those great "economic laws" (see Chapter X) which it is necessary for us to study.

**The law of diminishing returns: an illustration.** — We can get an idea of the law of diminishing returns by taking an example which would be familiar to any farmer. Suppose you ask a farmer how many bushels of wheat he can raise on his farm. He replies, let us say, "Thirty

bushels to the acre." You ask if he could not possibly raise more wheat to the acre, and he replies, "Certainly, I could easily raise more, if I hired another workman, bought better machinery, and put on more fertilizer; that is, if I used more capital and labor on my land." You ask him why he does not do this. He answers that it would not pay at the present price of wheat, as he would not get enough more wheat to pay for the additional capital and labor which would be necessary. This is a good illustration of the law of diminishing returns. Every farmer understands that it pays him to use a certain amount of labor and capital on his land and that he can always increase his product by using more capital and labor, but that beyond a certain point it does not pay to increase the product in this way. The farmer may never have heard of the law of diminishing returns, but he understands it nevertheless.

**Statement of the law of diminishing returns.** — *The law of diminishing returns may be stated as follows: On a given piece of land, increasing the amount of capital and labor employed results at first in more than a proportionate increase in the product, but after a certain point further increase of labor and capital, while they still increase the product, do not increase it proportionately.* For instance, suppose we have a hundred-acre farm, upon which one man is employed with one team of horses and machinery and fertilizer in proportion. This farm would not yield a very large product, because the one man and the small amount of capital would not be enough to work it well. He might get perhaps an average of ten bushels to an acre. Now suppose we bring in another man, another team of horses, and more machinery and fertilizer. Doubling the labor and capital will probably more than double the product. We may now get twenty-five bushels

to the acre. Suppose we add a third man, team, and installment of machinery and fertilizer; we may now get thirty-eight bushels to the acre, which shows that the new increase of labor and capital was worth while. But if we add a fourth installment of labor and capital, we shall probably find that the product is no longer increased in proportion. We may now get perhaps forty-five bushels to the acre. This means that the point of diminishing returns has been reached. It is true that we have increased the product, but we have not increased it in proportion to the amount of additional capital and labor employed. We might go on adding more capital and labor, and for a long time we would get more wheat to the acre, but the increase would grow smaller and smaller in proportion to the capital and labor required to produce it.

**The "extractive industries."** — The law of diminishing returns always holds true and is easily understood in agriculture, but it applies also to other lines of production. In cutting the timber from a forest, the logger knows about how much labor and capital it pays him to employ. Many of the inferior and the less accessible trees are left standing. Why does not the logger clear them all off, since the timber he leaves would certainly be of value? The answer is that while he could get more wood from the forest, it would not pay for the additional capital and labor required. In other words, he knows that he is subject to the law of diminishing returns and he finds it does not pay to employ more than a certain amount of capital and labor on a given tract. In the same way the coal miner does not take all the coal that he could possibly get out of the mine. Some of it is in shallow deposits and in remote galleries, and some is left in pillars to support the roof of the mine, and the increased

capital and labor necessary to bring it to the surface would not increase the product proportionately. The law of diminishing returns applies particularly to all those industries which are devoted to obtaining the materials which nature furnishes. These industries, such as farming, mining, forestry, fishing, etc., we call the *extractive industries*.

**Increasing costs.** — The law of diminishing returns is very important in the production of wealth. It means that capital, labor, and land must be employed in just the right proportions in order that industry may be most profitable. It also means that, in the production of a great deal of the world's wealth, the cost of producing a unit of product becomes greater as the number of units produced is increased. That is, the law of diminishing returns causes many industries to operate under conditions of *increasing costs*. This is generally true of farming, forestry, mining, fishing, and of all the extractive industries.

**Constant costs.** — In other industries, however, this result does not always follow. Sometimes an industry operates under conditions of *constant costs*. This means that the cost of producing a unit does not change with an increase in the amount produced. In other words, the cost per unit remains the same no matter how much is produced. This may happen in some of the simple lines of manufacture like the custom tailor's trade, and in businesses where the work is mostly done by hand labor, with little use of land and capital; e.g., a hand laundry. The industries that operate under constant costs are not very numerous or important.

**Decreasing costs.** — There are also industries operating under conditions of *decreasing costs*. Here the case is just the opposite of those that are subject to increasing

costs. The greater the amount produced, the less is the cost per unit. This condition is often found, to a certain extent, in those industries which make a great use of costly and complicated capital, such as the more complex forms of manufacturing and the railroads, trolley lines, telegraph systems, etc. We shall study some of the very interesting results of decreasing costs in the chapters on transportation and railway rates (Chapters XXXI and XXXII). The industries subject to decreasing costs are much more numerous and important than those subject to constant costs.

**Increasing costs the rule.** — In spite of the many important cases of industries operating under conditions of constant or decreasing costs, it is still true that the production of wealth in general is compelled by the law of diminishing returns to be carried on under conditions of increasing costs. This is because all industries must depend finally on the land for their raw materials, — iron and other minerals, wood, coal, oil, leather, and all food materials. These are all products of the extractive industries and subject to the heavy pressure of the law of diminishing returns. No matter how favorably situated a particular industry may be, it cannot go on indefinitely increasing its output without running up against the increased cost of all the materials which it uses. In the long run, then, practically all industry is subject to the law of diminishing returns, and it can safely be said that, in general, costs tend to increase as the amount of the product increases.

**Cost of production and supply.** — The supply of any kind of wealth on the market depends on the cost of production. Let us go back to the example of the farmer on page 167. He found that he could raise 1,000 bushels of wheat on his farm at a cost of \$1.20 a bushel; if he



should raise 1,100 bushels, the extra 100 bushels would cost \$1.25 each; he could raise another 100 bushels at a cost of \$1.30; and so on. Now, if the farmer knew that the price of wheat would be only \$1.20 a bushel, he would not try to raise more than 1,000 bushels. Whatever he raised above that he would have to sell at a loss. For this farmer we can construct a supply schedule, something like this:

<i>Prices</i>	<i>Amounts produced and offered for sale</i>
\$1.20	1,000 bushels
1.25	1,100 "
1.30	1,200 "
1.35	1,300 "
1.40	1,400 "

This is both a supply schedule and a cost schedule. It shows the amount of wheat the farmer would be willing to raise and sell at various prices. And it also shows what the *last hundred* bushels would cost, assuming that he raised the various amounts in the second column. This shows clearly that it is the cost of production that determines this farmer's supply of wheat.

If we should combine the similar supply curves of all the wheat farmers of the country, we should have the total supply of wheat, which would depend upon the cost of producing different amounts of wheat for the whole country. The amounts offered for sale will increase only if the price is increased, because the costs increase as more is produced.

In Chapter XVII it was stated that supply curves generally slant upward; they are ascending curves. The reason for this is now clear. It is the fact of increasing costs that makes the supply curves ascend. Producers and dealers can generally be induced to increase the

total supply of goods on the market only by offering them higher prices. The higher the prices, the greater will be the quantities offered for sale. Hence the supply curves slant upward.

**Results of competition.** — Competition is one of the greatest economic forces in the world, and our whole system of modern business is based upon it. We have seen that when there is competition goods are offered on the market at what it costs to produce them. No producer or dealer can force the people to pay him more than it costs to produce the goods, for if he should try, people would leave him and buy of others who are willing to sell at cost. Every careful housewife keeps track of the prices at the different stores, and just as soon as one store gets the reputation of charging extra-high prices people begin to leave it and trade at the competing stores. Of course there are exceptions. Some people are careless. In particular the very wealthy sometimes pay little attention to prices. But the careless and the wealthy are only a small part of the whole community. The great majority of people will seek to buy where prices are lowest, and the dealers cannot afford to ignore this fact.

Competition also forces producers to keep costs as low as possible. The efficient business man tries always to keep costs down, because that will mean bigger profits. With lower costs, he can offer his goods at lower prices and still make a good profit. The inefficient producer, who does not succeed in keeping his costs low, finds that if he tries to charge what the goods cost him, no one will buy of him; whereas if he makes his prices as low as his more efficient competitor he cannot make any profit. So the inefficient producer is forced out of business. The people therefore, in general, get the goods at the lowest prices at which they can be made.

Another result of competition is to induce manufacturers and dealers to furnish the people the kind of goods they want. Some manufacturers are skillful in seeing what sort of things people will want. They produce such things and the shrewd storekeepers buy of them. Other manufacturers, who have made things that do not suit the people, find they cannot sell their goods. And the dealers who stock up with unpopular merchandise find their goods are left on their hands. The people patronize the makers and dealers who furnish the kind of things they want. Sooner or later, those who do not furnish what the people want fail and go out of business. So long as there is competition the public may generally count upon the producers to furnish the kind of goods that are wanted at cost of production, and any one can generally buy whatever he wants provided he is ready to pay the price. All of this is the result of competition and the working of demand and supply.

**Combination and monopoly.**—Competition is the rule in modern business. But there are many important exceptions; i.e., cases in which competition between producers does not exist. These cases are the result of combination or monopoly. When competition ceases, it is no longer true that prices are necessarily equal to cost of production. What happens in such cases will be studied in the next chapter.

#### EXERCISES

1. What is competition? Give an example from your own knowledge.
2. Is there competition between the two parties in each of the following cases? Give reasons.
  - (a) Two retail grocers in the same block.
  - (b) A retail shoe store and a retail fruit store in the same block.

- (c) A retail grocer in Boston and a retail grocer in Chicago.
  - (d) A buyer from a Kansas City clothing store and a buyer from a Cincinnati clothing store, both seeking to buy goods in Chicago.
  - (e) A mail-order house in Chicago and a mail-order house in New York.
  - (f) A wholesale fruit dealer in Los Angeles and a wholesale fruit dealer in San Francisco.
3. When there is competition, why cannot the price ordinarily be above the cost of production?
  4. Why cannot the price ordinarily be below the cost of production?
  5. A certain farmer is getting 20 bushels of corn from each acre cultivated. Could he get more corn from each acre? How? If he could get more, why does he not do so?
  6. How does a farmer decide how much labor and capital to put on his land?
  7. Why is competition generally beneficial to the public?

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## CHAPTER XX

### COMBINATION AND MONOPOLY AND THEIR EFFECT ON PRICE

**Combination defined.** — It often happens that two or more competing producers come together and agree to cease competing among themselves. In particular they are likely to agree to sell at the same price. Such a union of producers is called a *combination*. *A combination is a union of persons engaged in the same enterprise, who have agreed to act together.*

**Effect on competition.** — If the combination is a small one and there are other important independent producers, then there will still be competition. The combination will compete with the other producers, and the supply will still be determined by cost of production. Two neighboring grocery stores may combine and agree upon prices. But if there are other stores near at hand, competition goes on. The stores that combined cease to compete with each other, but they have to compete still with the other stores.

But sometimes a combination is so large that it does not have to compete with the outside producers. The outsiders, if any, are so few and so small that they could not furnish the public any large part of the goods it wanted, even though the combination should charge unreasonable prices. Such a combination may then decide upon the price at which it will sell without much regard to the others. If they underbid it, the combination lets them sell what they can and does not try to sell to

their customers. Thus the combination ceases to compete. The price it charges is no longer necessarily equal to cost of production, as is the rule under competition (Chapter XIX).

**Kinds of combinations.** — The formation of huge combinations was one of the most important economic developments of the latter part of the nineteenth century and the early years of the twentieth, especially in the United States. There are various ways of forming combinations. The simplest is the *pool*, or *agreement* between the producers to sell only at certain prices, or to divide the territory, each one selling only in its own region, or in other ways to put a stop to competition. In the latter part of the nineteenth century, *trusts* were often formed. The majority stockholders of the several competing corporations turned their stock over to a *committee of trustees*. The men on this committee would attend the stockholders' meetings of the several corporations and, having the majority of the stock, could outvote all others and control the management of the corporations. All the former competitors were thus directed by one committee, and competition between them ceased. This form of combination has been made illegal in the United States. The *holding company* is another device for accomplishing the same purpose. A single corporation buys up a majority of the stock of the several competing corporations. This holding company is then able to direct the policy of the former competitors just as was done by the trust. Finally we have the actual *consolidation* or *merger* of several competing corporations into one great corporation. The former corporations cease to exist and all their property is turned over to the new corporation. This of course puts a complete stop to competition between these corporations. All of these

combinations are alike in bringing together a huge aggregate of capital in a particular line of industry.

**Public opinion and law.** — Public opinion and the law in the United States do not look with favor upon these great and powerful combinations. Trusts have been made illegal. The law also declares illegal all "unreasonable combinations in restraint of trade." This makes it very hard to operate such combinations, since their agreements will not be enforced by the courts. If one member breaks the agreement, the others cannot go to court and compel him to live up to his contract or pay damages for breaking it, as may be done in the case of ordinary contracts. The various forms of combination are always in danger of prosecution as illegal combinations in restraint of trade. The United States government has thus prosecuted the Standard Oil Company, the "Tobacco Trust," and several other combinations, and has compelled them to dissolve or change the form of their organization. The hostility of the law to pools, trusts, etc., has encouraged the complete *consolidation* of separate corporations into one great corporation. The United States Steel Corporation is a good example.

**Definition of monopoly.** — The absence of competition may also result from *monopoly*. For example, a man may own the land on which are located the springs which produce a certain kind of mineral water, the only source of that particular kind of water. He has a monopoly of its sale. As there is no other seller, there can of course be no competition. Again, a publisher has the copyright of a certain book, which means that no one else is allowed to print or sell it except with his permission. He has a monopoly, and of course there is no competition in the sale of this book. In each of these cases we notice that

the monopoly consists of the possession of something *unique*. Nowhere are there any other mineral springs like the ones in the example. No one else has the right to print and sell this particular book. The great opera singer, Caruso, had a unique voice. These examples will give an idea of what is meant by monopoly. *A monopoly is the possession of a unique article or class of wealth, or unique personal ability, legal privilege, or economic organization.*

**Monopoly and the monopolist.** — The word “monopoly” is sometimes used to mean the person or persons to whom a monopoly belongs; i.e., the “monopolist.” Thus, instead of saying the local gas company *has* a monopoly, we sometimes say the company *is* a monopoly. No confusion will come from this double use of the word.

**Kinds of monopolies.** — There are several kinds of monopolies, depending on what unique thing is possessed. Let us consider some of the most important.

(1) **Natural monopoly.** — A *natural monopoly* exists when the thing possessed is the only natural source of some commodity or service. For example, there are located in certain places springs which yield valuable mineral waters. Such mineral springs are located at Carlsbad in Bohemia, at Saratoga, New York, and other places. The persons who own the land on which a particular kind of spring is located have a natural monopoly. Such monopolies are likely to exist wherever the whole (or nearly the whole) supply of a certain commodity comes from a certain restricted area, such as the diamond fields in Africa or the anthracite coal region of Pennsylvania.

(2) **Nonreproducible capital.** — There is also monopoly when a person possesses a unique nonreproducible article of capital. The Dresden art gallery has



the "Sistine Madonna," a world-famous painting by the great master, Raphael, who lived in Italy four hundred years ago. This is an absolutely unique thing, and it can never be reproduced. The Dresden gallery has a monopoly in its possession. This sort of monopoly, while interesting, is not of great importance in production.

(3) **Personal monopoly.** — When the late Caruso was advertised to sing, many people went to the opera simply because they wanted to hear Caruso. Nobody else in the world could furnish the service that these people wanted. Caruso had a monopoly; he absolutely controlled the supply of a certain service; i.e., his own singing. There is only one Charlie Chaplin in the world. When the moving picture producers want to show his acting on a film, there is no one to supply the service except Charlie Chaplin. He has a monopoly of his own acting. This sort of *personal monopoly* is possessed by famous actors, singers, painters, physicians, and others, when they have such a reputation that people want the services of a particular person and no one else.

(4) **Public legal monopoly.** — *Legal monopoly* is a monopoly which is created by a law or regulation of the government. Governments often keep for themselves the monopoly of certain goods or services. Thus the tobacco business is a government monopoly in France; the purpose is to make profits to help pay the cost of running the government. Government salt monopolies exist in some countries, for the same reason. In some countries the government has a monopoly of the liquor business, as in Norway and formerly in the state of South Carolina, the purpose being to control the use of liquor. The United States post office has a monopoly of the business of carrying letters. Such government monopolies are called *public legal monopolies*. We shall

study the United States post office in a later chapter (Chapter XLII).

(5) **Private legal monopoly.** — Another kind of legal monopoly consists of those granted by the government to private individuals or corporations, called *private legal monopolies*. Some centuries ago, the monarchs of Europe frequently granted such privileges to favored subjects. Nowadays this sort of favoritism is generally considered contrary to public interest and is seldom found. The only important cases that we have in the United States are patents, copyrights, and exclusive franchises.

**Patent.** — When a citizen of the United States invents a new instrument or process he may secure from the government a *patent*, which gives him the exclusive right to make and sell his invention, for a term of seventeen years. This gives him an absolute monopoly for this period. If he himself does not wish to manufacture his device, he can sell or lease his patent to some one who will develop and market it. This monopoly is a valuable privilege. It encourages invention, and it also offers an inducement to business men to take the risk of manufacturing and trying to sell the new device. It is felt that the public gains through having the new device, and that it is therefore an advantage to the public thus to encourage its invention and development. The primary purpose of this kind of monopoly is therefore to serve the public welfare; the benefit to the inventor is only incidental.

**Copyright.** — The *copyright* is an exclusive right to publish and sell books and other "works of literature and art." The period for which the monopoly runs is generally longer than in the case of the patent; in the United States it is twenty-eight or fifty-six years. The

purpose of the copyright, is similar to that of the patent right.

**Exclusive franchise.** — *Exclusive franchises* are frequently granted by governments, giving to some person or corporation the exclusive right to use the public highways for furnishing certain services to the public. Thus our American cities grant franchises to street railway companies to lay their tracks and run their cars in the city streets. Telephone and telegraph companies are given exclusive rights to run wires above or under the streets. Gas and water companies receive franchises permitting them to lay pipes under the streets. When such a franchise is granted to a single individual or corporation it is a private legal monopoly. Like the patent and the copyright, the exclusive franchise is presumably granted in the interest of the public welfare, the purpose being to secure a service for the people in an enterprise in which experience has shown that competition will not work well. This form of monopoly we shall study more thoroughly in the chapter on public utilities (Chapter XXXI).

(6) **Monopoly of organization.** — There is one other important kind of monopoly, the *monopoly of organization*. Such monopolies are likely to occur in those industries which operate under conditions of decreasing costs. When the cost of production decreases with the amount produced, the large organization has an advantage in selling over its smaller rivals, and the greater the organization, the greater is this advantage. It sometimes results that a single producer or combination of producers becomes so great that it overshadows all others. It has so great an advantage that it can undersell all others while still selling above its own cost of production. It may finally drive all rivals from the field and so gain a

monopoly, due to its unique magnitude of organization. No small rival can compete, and there is no rival of equal size. Such monopolies appear most often in the railroad business, the telephone and telegraph business, and other lines of public service. We shall postpone their study till we come to Chapters XXXI and XXXII.

**Absence of competition. Monopoly price.** — The most important characteristic of monopolies and combinations is that they generally do away with competition. When there is monopoly, there can of course be no competition at all in the selling of its particular commodity or service. In the case of combination, as we have seen, competition ceases between the members of the combination, and sometimes the combination becomes so great that it ceases to compete with other producers. It is this escape from competition which is the goal of most combinations. The absence of competition has an important effect upon the conditions determining price, which we must now study. Prices determined without competition are called *monopoly prices*, whether the absence of competition is due to monopoly or to combination.

**Demand and supply still control.** — First of all, we must bear in mind that monopoly price is determined by demand and supply, just as much as competitive price. The laws of demand and supply and market price (as stated in Chapters XVII and XVIII) still hold good. Note also that the absence of competition among producers has no effect whatever on the *demand* for the product. The only change is in the conditions determining *supply*. Under competition (see Chapter XIX), the price tends to equal cost of production. In the absence of competition this is no longer true. The monopoly does not have to offer its goods at their cost of production. The people must come to it to buy;

there is nowhere else to go. The monopoly can set any price it wishes, and it can sell goods so long as there are people who want the goods enough to pay the price asked.

**How does a monopoly fix its price?** — How, then, does the monopoly decide what price it will charge? Of course we may be sure that the monopoly will not charge less than the cost of production. But will it charge a great deal more than the cost? Is there any limit to the price it will charge? Yes. There is a limit, due to the fact that the higher the monopoly puts its price, the less it will be able to sell. The monopoly has no control over demand. If the monopoly sets a low price, equal to cost or just a little above, it will sell large quantities, though its profit on each unit will be small. On the other hand, if it sets a very high price, it will make a large profit on each article but can sell only a few. What the monopoly is usually after, is the greatest possible total profit. The total profit is the product of the profit on each unit by the number of units sold. The monopoly can always increase the profit per unit by raising the price, but if this causes the number sold to fall off too much, the total profits may be less. The monopolist's problem is made still more complicated by the fact, which we have already learned, that the cost per unit is likely to change with changes in the quantity produced.

There is no general rule for telling in advance just what price will be most profitable. The monopolist in each case has to calculate and experiment in order to find the price that will give the greatest profit. Many people have the idea that all monopolies charge very high prices. This is true of some monopolies, but not of all. Very often monopolies find it more profitable to charge low prices and so get large profits by making large sales.

**Elastic and inelastic demand.** — In determining monopoly price, the most important thing to be considered is the elasticity of demand. We have learned that the demand for some things, such as certain luxuries, is very elastic; that is, as the price rises the demand falls off rapidly. A monopoly selling such an article will have to be careful not to put its price too high. If it is too greedy, it will soon find that few people are buying and that its chance of big profits is gone. For articles with an elastic demand the wise monopoly therefore will generally charge fairly reasonable prices. It is different when a monopoly gets control of the supply of a necessity. The demand for necessities is inelastic. People will generally have to buy the article even though the price is unreasonably high. Raising the price does not reduce the sales so much. The monopoly, if out for the biggest possible profits, is able to put its price far above cost of production and so reap large profits.

It is evident, therefore, that, although the monopolist has the power to fix the price of his product, he does not always charge the highest possible price. In general, his own self-interest will lead him to fix a price somewhat below the maximum, and it is possible that the price so fixed may be little if any higher than would be determined under competitive conditions.

**Limitations upon monopoly price: (1) Substitutes.** — Indeed, there are some very important limitations to the price-fixing power of the monopolist, which we must now study. There is, first, the presence of substitutes. Few goods are absolutely indispensable. If the price is too exorbitant, it is very likely that some one will find and offer for sale a substitute. If the waters from a certain spring are offered only at a very high price, people will find that there are other springs whose waters,

though not quite so desirable, will still do fairly well. If the local gas company charges excessive rates, people will take to using oil lamps and will use the coal stove instead of the gas range. And even Charlie Chaplin would find, if he became too exacting, that the film producers would be able to get some one to take his place. The fact that there can almost always be discovered something "just as good" or nearly as good, puts a powerful check upon the greed of many monopolists.

(2) **Potential competition.** — In the second place, it should be remembered that a combination's control of the supply is seldom absolute and complete. Often there are some competitors in the field. So long as the combination is fairly reasonable, it can charge what it sees fit, without any trouble from these small competitors. But if the price becomes too excessive, the other producers will be stimulated, by the lure of great profits, to extend their operations, and eventually they may grow strong enough to threaten the combination's position and its power over prices. And even if there are no competitors in the field, a grasping policy by the monopoly or combination is often attended with the danger of arousing new competition. Competition which, though not actually present, is always likely to be aroused, is called *potential competition*. Nearly every great American "trust" which has been too grasping in its price policy has sooner or later been faced by some unexpected competitor. The danger of potential competition is an ever-present check to the rapacity of the monopolist.

(3) **Risk of legal interference.** — Finally, the combination or monopoly always faces the danger of public disapproval and *legal interference*. Combinations and monopolies are never popular with the consuming public.

Those which charge exorbitant prices and show huge profits are sure to attract public attention. Then comes a demand that the government interfere to control the prices charged for the product and otherwise regulate the business. There have been many cases of such legal interference with American combinations and monopolies. Congress and the various state legislatures have very seriously curtailed the power of the railroads to fix their own rates. Trolley companies, gas companies, water companies, telephone and telegraph companies have generally had to submit to legal regulation of their rates. The Standard Oil Company, the great meat packing corporations, and many other concerns that had, or were believed to have, monopoly powers, have been subjected to legal regulation or at least Congressional or legislative investigation. The last thing the ordinary combination or monopoly wants is public investigation and legal regulation of its business, and the wise monopolist is thus restrained from charging prices as high as he might otherwise consider.

**Judgment of monopoly.** — We see, then, that the power of combinations and monopolies over prices is not so unlimited as some people suppose, and that monopoly prices are not always so high as is commonly thought. Nevertheless, monopoly is not generally in the interest of the public welfare. There are some exceptions. Personal monopolies are not of great importance; they are inevitable and cannot do the public any serious harm. The legal monopolies, such as patents, copyrights, etc., are granted in the public interest and are generally beneficial. There are certain other forms of monopoly which are inevitable. These we shall study later. But in general, if monopoly can be avoided, the public interest is better served when industry is carried on under con-



ditions of competition. As we have learned, competition insures that the people will get the kind of goods they want at the actual cost of production and in whatever quantities the people are able to pay for. Monopoly does not guarantee this. The monopoly price will almost always be at least somewhat above cost of production, and the monopoly is not so firmly compelled to produce the kind of goods that the people want.

It makes a great difference whether the combination or monopoly controls an article of luxury or a necessity. The public will not generally suffer very much from a monopoly controlling an article that is not a necessity. The monopoly, in its own interest, will not be likely to charge an exorbitant price, and if the price is too high, people can do without the article. On the other hand, monopoly control of the necessities of life is a far more serious matter. The monopoly is here more able to exact unreasonably high prices, and the people have little escape from paying.

Public opinion generally holds that monopoly should be prevented so far as possible, particularly in the necessities of life, and that in those industries where monopoly appears to be inevitable or desirable, the government should regulate the monopolist's business in order to insure to the public reasonable prices and fair treatment.

#### EXERCISES

1. What is the difference between a pool and a trust? Between a trust and a holding company?
2. What is the difference between a combination and a monopoly?
3. Give two or three examples of each kind of monopoly.
4. Why is monopoly price likely to be higher than competitive price?
5. Does cost of production determine monopoly price?
6. Do all monopolies charge exorbitant prices?

7. Suppose A has a monopoly of coal and B has a monopoly of fur coats. Which monopoly will be more likely to charge an exorbitant price? Why?

8. Name and explain the principal things that tend to keep monopoly prices down.

9. Which is generally more favorable to the public, monopoly or competition? Why?

10. Give an example illustrating how a monopolist fixes his price so as to get the maximum profit. Can you illustrate it by means of curves?

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## CHAPTER XXI

### LOAN AND RENTAL OF WEALTH. RENT AND INTEREST

**Loans and rentals.** — Every housewife has at some time or other unexpectedly found herself short of some necessary article. She has had to go to a neighbor and borrow a cup of sugar, a loaf of bread, or a little tea. A student has some essays to write and rents a typewriter for a week or two. A traveling salesman comes to a town and hires or rents an automobile with which to make his calls in the town and surrounding country. A dry-goods merchant borrows money from the bank in order to buy his spring stock of goods. A farmer rents a neighboring pasture lot in which to keep his cattle. These are a few examples of the many ways in which people make use of other people's wealth.

A moment's thought will convince one that a great many people are making daily use of wealth that is not their own, and that surprising numbers of people appear willing to entrust their wealth to others. A great part of all the world's wealth is thus regularly turned over by its owners to others to use. Much of modern business is dependent upon such transactions, which we call *loans* or *rentals*. If the thing borrowed is money, the transaction is always called a loan. When other kinds of wealth are involved, either term may be used. The word "loan" will often be used to include both "loans" and "rentals."

**Reasons for borrowing; Consumption.** — People bor-

row for a great variety of reasons. But most loans may be separated into two groups. For example, in ancient and medieval times people generally borrowed in order to obtain the means to satisfy their personal wants. Poor people borrowed because they were in need of the necessities of life. If they could find some one to lend them money or provisions, they could thus provide themselves with what they needed, and hoped to be able to repay the loan at some future time. Many such poor borrowers were unable to pay and as time went on they fell deeper and deeper into debt and into the power of the money lenders. Kings and nobles obtained similar loans, borrowing in order to equip armies, build palaces, or otherwise satisfy their desires. In modern times there is still some borrowing of this sort. There are persons who depend from time to time upon the money lenders for the necessities of life. This is the kind of borrowing that is usually done at the pawnshops and "loan agencies" of various sorts that are to be found in every city. There are school boys and college students who have uncomfortable knowledge of what it means to "hock your watch" at the pawnbroker's. Well-to-do people sometimes borrow to build houses or buy automobiles. These are examples of "borrowing for consumption."

**Borrowing for investment.** — But most of the borrowing nowadays is of an entirely different sort. Here is a young man who has just finished his education and who sees a good opportunity to open a new store in his home town. He has confidence that he could make good profits if he could once get started. But he must first buy a stock of goods, and he has no money. If he could buy merchandise for \$40,000, he could very likely sell it for \$50,000 by the end of the season and have three or

four thousand dollars for himself after paying his other expenses. But how is he to get the money to start with? The answer is, borrow it. If he can find some one who has \$40,000 to spare and who shares his confidence in the probable success of his business venture, he may persuade this person to lend him the \$40,000 and to accept his promise to repay it after a year, or perhaps in installments as he sells his goods. This is "borrowing for investment."

Most people would be astonished to learn what an enormous amount of such investment borrowing goes on all the time in the modern business world. It is not only young men just starting in business who borrow. Old and established business men and firms borrow. Almost every store borrows money at the season when it is buying its stock of goods from the wholesalers and repays its loans as it sells the goods to its customers. Manufacturers borrow at the seasons when they have heavy payments for materials and other expenses and repay their loans when they sell their finished products. Farmers often borrow to buy seed and fertilizer and machinery and to pay wages to their laborers during the time the crops are growing; when the crops are harvested and sold they pay back what they have borrowed. Great corporations engaged in all kinds of business—railroads, trolley companies, mining companies, manufacturing companies—borrow millions and billions of dollars to use in business.

**Government borrowing.**—Governments are among the greatest borrowers of all. The United States government owed about a billion dollars during the first part of the twentieth century. During the World War it borrowed about twenty-five billion dollars. Nearly all our state governments and many of our cities are in

debt. Most government borrowing is for consumption, like that of the family that borrows to buy the necessities of life, though some of the loans of states and cities are for investment in public enterprises, such as canals, docks, roads, and bridges.

**The lenders.** — Of course no one could borrow if there were not other persons willing to lend. The lenders are people who have wealth which they do not need just at present to satisfy their wants and which they also do not care to use in business themselves. In every town and city there are wealthy men and women who are willing to lend their wealth to others. There are also people who are not wealthy at all, even some poor people, who still have small sums saved up which they are willing to lend.

**Economic results of loans and rentals.** — Thus, by means of loans and rentals vast quantities of wealth are constantly being handed over by the owners to other persons to use. This accomplishes two important results. Consumption loans take wealth from those who at the present moment need it less and give it to those who need it more. Wealth is thus made to satisfy the most urgent needs. But of far greater importance is the result of borrowing and renting for investment. Such loans have the effect of putting the productive wealth (land and capital) of the world into the hands of those best able to use it. Wealth does not have to lie idle or be used inefficiently simply because the owners are disinclined or not qualified to put it to productive use. On the other hand, business men of energy and ability are not restricted to humble occupations or small enterprises simply because they do not possess great capital. The land and capital and the capable entrepreneurs are united by means of loans. This is a powerful aid to production

and so tends to increase the wealth available for the satisfaction of human wants.

**Rent and interest.** — Ordinarily people will not lend for nothing. To get the owners to lend their wealth, the borrowers have to agree not only to pay back the exact amount they borrowed but also something additional. *The income received for the use of wealth is called either rent or interest.*

**Rent.** — Thus, when a girl rents a typewriter and pays two dollars a month for its use, the payment is called *rent*. When a farmer rents a pasture and receives each year six dollars an acre, the income is rent. The person who lives in a rented house or rents an office pays rent, so many dollars a month. Sometimes land is rented "on shares." The tenant agrees to give the landowner a certain part (as a half or a third) of the produce. The produce given to the landowner is rent. In all such cases, where the income or payment is expressed in relation to the particular article of wealth loaned or rented (as six dollars per acre of land, two dollars for a typewriter, half the produce of a garden lot, etc.), the term rent is used.

**Interest.** — The term *interest* is used in a special way. Suppose A borrows \$3,000 of B, agreeing to pay \$150 a year for its use. The agreement states that "interest" is to be paid "at the rate of five per cent a year." This means that the annual payment is to be equal to five per cent, or five hundredths, of the sum of money loaned. The income (rent) for the use of land may be expressed in the same way, if we know the value of the land and the value of the rent. Thus, in the example used in the preceding paragraph, rent was paid for land at the rate of six dollars per acre each year. If the land was worth one hundred dollars an acre, then the payment is at the

rate of six per cent and may be called interest. So if a landowner rents land worth \$500 on shares and receives \$50 worth of produce in a year, we may say that his land is yielding interest at ten per cent. Evidently before we can use this sort of expression, we have to know the value of the income (rent) and the value of the wealth loaned.

**Definition of interest; the rate of interest.** — *When the income received for the use of wealth is expressed in relation to the value of the wealth, it is called interest. The ratio of the value of the interest to the value of the wealth is called the rate of interest.* Thus, if a man buys a lot

and builds a house on it, the whole costing \$25,000, and he then rents the house and lot for \$1,500 a year, he finds the rate of interest on his investment by dividing

\$1,500 by \$25,000. The result is  $\frac{1,500}{25,000} = 0.06$  or  $\frac{6}{100}$ .

We call this six per cent. So when B receives \$150 a year from A for a loan of \$3,000, the rate of interest

is  $\frac{150}{3,000} = 0.05 = \frac{5}{100}$ , or five per cent. "Per cent"

is an abbreviation for *per centum*, which is the Latin for "by the hundred" or "per hundred."

When we say the rate of interest is five per cent, we mean that for each hundred dollars of value of wealth the value of the income will be five dollars *for one year*. The full legal phrase is five per centum per annum (i.e., per year), but the period of one year is always understood in speaking of interest rates, unless some other period of time is stated. One might say one per cent a month. That means the interest is one dollar for each hundred dollars for each month. But when a person says simply "five per cent," he means "five per cent a year" and this is the way interest rates are almost always stated.



**Simple and compound interest.** — Interest is either simple or compound. *Simple interest* is paid at the end of each year (or other period for which the interest is computed). For example, if a loan of \$100 is made for ten years at four per cent per annum simple interest, four dollars interest is paid at the end of each of the ten years. At the end of the tenth year the principal \$100 is also due. When a loan is made at *compound interest*, the interest is left unpaid and added to the principal at the end of each year (or other period for which the interest is computed). For example, if a loan of \$100 is made for ten years at four per cent per annum compound interest, no payment is due till the end of the tenth year. At the end of each year the interest for that year is added to the principal and the sum becomes the new principal, for calculating the next year's interest. At the end of the second year this process is repeated, and so on, till the whole amount (interest and principal) is paid at the end of the tenth year.

**The mathematics of interest.** — In order to understand fully the subject of interest and to be able to solve the ordinary business problems of interest, discount, capitalization, depreciation, amortization, etc., a knowledge of certain processes of arithmetic and algebra is essential. For this purpose nothing more is required than is contained in the most elementary textbooks of arithmetic and algebra. The most important terms used are thus defined:

(1) The value of wealth loaned is the *principal* (designated *P*).

(2) The income received for the use of wealth (when expressed in relation to the principal) is *interest*, (designated *i*). We commonly use the word interest as an abbreviation for "the value of the interest."

(3) The ratio of the value of the interest for one year to the principal, expressed as a percentage, is the *rate of interest* (designated  $r$ ).

(4) The value due from a borrower to a lender at any particular time; i.e., the principal plus the interest then due, is the *amount* (designated  $A$ ).

Most interest problems may be solved by the use of one or both of the following formulas:

(1) For simple interest,  $i = Pr$ . This may also be written:  $r = \frac{i}{P}$ , or  $P = \frac{i}{r}$ .

(2) For compound interest,  $A_n = P(1 + r)^n$ . In this formula  $n$  stands for the number of years (or other periods) for which interest is due.

Sometimes a loan is perpetual. Let us suppose that L lends B \$1,000 at 5%, and at the end of the year, after B has paid the interest of \$50, they agree to renew the loan for another year. Then B does not pay back the \$1,000 principal but keeps it for another year. At the end of the second year he again pays L \$50 interest, and they renew the loan for another year. They might keep this up indefinitely, and both parties be satisfied, so long as the interest was paid each year. They might even finally make an agreement by which B is not required to pay back the principal at all so long as he pays \$50 interest each year. The loan would then be a perpetual loan. Governments often arrange loans of this sort. The British "consols" are loans in which there is no agreement ever to repay the principal but simply to pay a certain amount of interest forever. The United States "consols of 1930" are the same kind of loan. The United States government may pay the principal back if it wishes after the year 1930, but it does not have to repay the principal so long as it pays the interest each year.

**Discounting future wealth.** — The two most important characteristics of the rate of interest in practical business are that it serves (1) as a connecting link between future wealth and present wealth, and (2) as a connecting link between the value of income and the value of wealth.

Suppose a man owns a forest of growing trees, too small to cut now, but which will yield \$15,000 net, from logs cut ten years from to-day. What is that forest worth? If we know the rate of interest, we can tell at once by means of the interest formula,  $A_n = P(1 + r)^n$ . Let us say the rate of interest is 6%.  $A$  is \$15,000 and  $n$  is 10. Substituting in the formula, we have  $15,000 = P(1.06)^{10}$ . This equation cannot be solved readily without the aid of logarithms. Business men and investors have books of tables all worked out, by means of which they can quickly solve any such equation. In this particular example,  $P$  is \$8,378. That is, if the rate of interest is 6%, a sum of \$15,000 due in 10 years is worth \$8,378 to-day. Put in other words, it means that \$8,378 invested to-day at 6% compound interest would amount to \$15,000 in 10 years. Then \$8,378 is called the *present worth* of \$15,000 due in 10 years. *The process of finding the present worth of a future payment or payments is called discounting.*

We can discount any number of future payments and find their present worth. Suppose a man owns a forest, from which he can sell \$10,000 worth of hardwood logs in 5 years, and \$15,000 worth of pine in 10 years, and in 12 years can sell the bare land for \$1,000. What is the present worth of this forest? The answer is found by simply adding the present worth of \$10,000 due in 5 years, \$15,000 due in 10 years, and \$1,000 due in 12 years. The sum of these three present worths is the present worth of the whole forest.

**Capitalizing income.** — Now let us see what is meant by a connecting link between the value of income and the value of wealth. Here is an orchard which yields 5,000 bushels of apples each year and, with proper care and replacement of trees, is likely to continue so forever. The annual expense of managing and maintaining it is \$7,000. How much would an investor give for that orchard? Before he can tell what the orchard is worth, he must find what apples are worth. Suppose apples are now worth \$2 a bushel and are expected to continue at that price. Then the annual income from that orchard will be \$10,000. Deducting the expenses, we have a net income of \$3,000 a year. If the rate of interest is 6%, we can find the value of the orchard from the simple interest formula,  $P = \frac{i}{r}$ . Substituting in this formula, we have

$$P = \frac{3,000}{.06} = 50,000.$$

The orchard is therefore worth \$50,000.

This is really only a special case of discounting, that is, when the future payments consist of a regular perpetual income. It is the net income of wealth that makes it worth while to own wealth. The above examples illustrate *how to determine the value of wealth (or capital) from the value of its net income*. The process is called *capitalizing*.

**Relation between value of wealth and future income.** — This relation between wealth and income is one of the most important principles in the whole science of economics. All wealth is expected to yield income. If, for example, no income were expected from a certain forest or orchard, it would be worthless and no one would care to own it. It is the expected income that makes

wealth worth having. And the value of wealth always depends upon the value of its expected income. It is by the processes of capitalizing and discounting that the value of wealth is determined. Notice that it is only the *future* income of wealth that has any effect on its value. Past income gives no value to wealth. Nobody will pay anything for past income. That income is gone forever and can do no one any good. It is the future income only that has any value or that can give value to wealth. But, some one may object, when men buy stocks, do they not look up the record of past dividends and so decide what the stock is worth? True, but the only reason they inquire about the past dividends is to aid them in forming their judgment as to the probable future dividends. If it were known that a certain stock was practically sure to pay 10 per cent dividends for the next twenty years, it would command a good price, even if it had never paid a cent in the past. And if it were known that a certain stock would never pay another dividend, the fact that it had paid 10 per cent for years would not give it any value. Past income is of importance only as an aid in estimating future income. It is future income only that gives value to wealth.

#### EXERCISES

1. What is usually the difference between the borrowing at a pawnshop and the borrowing at a bank?
2. Why do business men borrow?
3. Why do governments borrow?
4. How would production and prices be affected if all lending and renting of wealth were forbidden by law?
5. A receives an income of \$40 a month from the rent of a house and lot worth \$8,000. Show how this income can be expressed as interest.
6. Explain the difference between rent and interest.

7. The interest paid for a loan of \$4,240 for 1 year is \$318. What is the rate of interest?

8. What is the interest for 1 year on a loan of \$635 at the rate of 6%?

9. The interest paid for 1 year on a 5% loan is \$26. What is the principal of the loan?

10. The present worth of \$4,860 due 1 year hence is \$4,500. What is the rate of interest?

11. What will a loan of \$520 amount to in 2 years at 7% compound interest?

12. What is the present worth of \$926.10 due 3 years hence, interest being at the rate of 5%?

13. What will be the amount of a loan of \$600 for 8 months, with interest at the rate of 6% per annum compounded bi-monthly?

14. Mr. A makes a contract with Mr. B to have 100 tons of coal delivered to him 5 years from date at a price (when delivered) of \$10 a ton. If Mr. A should pay cash now, work out the formula showing how much he should pay.

15. A certain bond pays interest of \$75 a year forever. If the rate of interest is 8%, what is this bond worth?

References for further study. — Fisher, I., *Elementary Principles of Economics* (1912), pages 410-432. Van Tuyl, G. H., *Complete Business Arithmetic* (1915), pages 270-312.

## PART IV. MONEY AND BANKING

### CHAPTER XXII

#### MONEY: WHAT IT IS, WHAT IT IS MADE OF, AND WHAT THE DIFFERENT KINDS ARE

**Chief characteristics of money.** — The most important fact about money is that everybody is glad to get it in return for other things. Anybody who has anything to sell is willing to take money in payment. This is not true of other things. If you offered to pay for a suit of clothes with coal or hay, the storekeeper would probably refuse to sell. But you can always count on his taking your money. Why is it that money is the one thing that everybody is always willing to receive in return for other things? The answer is, because each person knows that other people will accept it whenever he wants to buy something. If it were not so, money would be of no use to him, for it cannot satisfy directly any want. The only use any one has for money is to exchange it for other things. But so long as each person knows that he can always exchange money for anything else that he may want, he will always be willing to receive money for anything he has to sell. In brief, money is *generally accepted* in exchange for other wealth and services.

But if one in the United States should offer to pay for a suit of clothes with an English bank note, the merchant would probably refuse it. Each nation has its own monetary system, and the money of one nation is not generally acceptable in another nation. When an American travels

in Europe, he has to exchange his American dollars for English pounds, shillings, and pence if he is going to England, or for francs and centimes if he is going to France. That is because our money would not be generally accepted in those countries. You may sometimes have received a Canadian quarter. Unless you lived close to the Canadian border you probably found it difficult to get people to accept the Canadian coin. As a rule, money is generally accepted only in the country which has adopted that particular money.

Money may consist either of articles of wealth or of property rights (page 23). For example, a ten-dollar gold piece is wealth. A ten-dollar bill, on the other hand, is not wealth, but simply a piece of paper which shows a property right to wealth. It is what people call "paper money."

**Definition of money.** — A scientific definition of money is as follows: *Money consists of articles of wealth and property rights which are generally accepted in a certain community in exchange for other wealth and services.*

**Origin of money.** — In early times and among savage and semi-civilized peoples all sorts of wealth have been used for money. Each community naturally came to use as money something that was common among them and wanted by nearly everybody. For example, certain ancient peoples used to live by keeping herds of cattle and flocks of sheep. All the people got their living from their herds and flocks. The most important kind of wealth that they had was their domestic animals. In trading among themselves and with outsiders, they naturally came to use cattle and sheep for money. They would sell land for cattle; they would buy clothing or jewels or anything else with cattle. Cattle and sheep were their money. The ancient Hebrews, as described



in the Old Testament, are a good example of people who used this kind of money.

The American Indians, in the days of the early white settlements in New England, were very fond of beads made out of certain small shells found along the sea-coast. They strung the beads in necklaces and sashes, and used them for ornaments. The beads were called "wampum," and every brave was eager to have as much wampum as he could get, to decorate himself and his family. Since everybody in the tribe wanted wampum, it naturally became the Indians' money. They bought and sold everything else for wampum and stated the prices of things as so many beads or so many belts of wampum. Even the white settlers, through trading with the Indians, came to accept wampum and use it for money. A schoolboy will understand how convenient this was, if he remembers how marbles are used as money among boys during the marble season.

**Gold and silver money.** — These examples will show how almost any kind of wealth might come to be used as money, as corn, wheat, furs, and tobacco were in the American colonies. But among civilized peoples to-day almost the only kind of wealth that is used as money is the precious metals, gold and silver. And the property rights which are used as money are themselves, either directly or indirectly, rights to gold and silver money.

**Qualities of good money.** — Gold and silver have been selected as the money of the civilized world because, in addition to being generally desired by people everywhere, they have certain qualities which make them more satisfactory than any other article of wealth. (1) They have *great value in small bulk*. That makes it possible to carry money of considerable value without being overburdened; whereas, if coal were our money, one would need a wheel-

barrow to take enough money to make a small purchase at the store. This quality also makes it easy and cheap to transport money from one city to another, or from one country to another. (2) The precious metals have the advantage of *durability*. Gold and silver can be kept practically forever without danger of spoiling. This is an important quality of good money. The early colonists in Virginia used tobacco as money, and people sometimes suffered loss because their store of money spoiled. (3) Another advantage of gold and silver is *uniform quality*. This means that all gold is alike, and all silver is alike. An ounce of pure gold is exactly like any other ounce of pure gold, no matter whether it was dug out of a mine in California in 1849 or mined last year in South Africa or the Klondike. This quality is very important for a useful money. The Virginia colonists always had to examine carefully their tobacco money to be sure some one was not trying to pay them in bad money. (4) *Divisibility* is another useful quality of the precious metals. This means, for example, that gold can be divided up into quantities of any size, without doing it any harm or reducing its value. The ancient Hebrews could not do this with their live-stock money. When a man wanted to buy something worth a sheep and a half, there was no convenient way of "making change." Gold and silver can be made up into coins of any convenient size without any loss of value. (5) Gold and silver are also *easily recognized*. They are not likely to be mistaken for other substances. Hence people are not easily fooled by cheaper substitutes; the coins cannot be readily counterfeited. (6) Finally, gold and silver have *stability of value*. That is, their value does not change from day to day or year to year so much as most other kinds of wealth. Instability was another defect of the tobacco

money of the Virginia colonists. A man would agree to sell something for so many pounds of tobacco, and by the time he received his pay the tobacco might be worth only half what it was when he made his bargain. The quality of stability is most important when men make contracts for future payments, or make loans, or put money in the bank, or make investments. It is desirable that the value of money shall change as little as possible. Gold and silver are not perfect in this respect. Their value does change, but they are better than most other commodities.

**Gold the money standard of most nations.** — These are the principal qualities necessary for a good money. There is no commodity in the world which is perfect in all these respects. But gold and silver come nearer to perfection than any other commodity, and they have therefore been accepted as the money basis of the civilized world. In fact, gold has proved to be better than silver, and to-day most of the nations of the world make gold the basis of their monetary systems, though silver is still used, as we shall see.

**Money now regulated by law.** — At the beginning, people adopted various kinds of money voluntarily and naturally, without any laws on the subject. But in all modern countries the monetary system is carefully regulated by law and the making of money is in the hands of the government. The government does three things. (1) It tells exactly what kinds of wealth and property shall be money, fixes the monetary unit, and defines the different kinds of money; (2) it makes the rules about *legal tender* (page 212); and (3) it coins the metallic money and engraves and prints the paper money.

**Money unit.** — In every country the government, when it establishes a monetary system, determines the

*money unit.* As described in Chapter IV, a unit is necessary for measuring anything. The money unit is the unit in which all the various kinds of money are measured. In the United States it is the dollar; in England it is the pound; in France, the franc; and so on.

**Four kinds of money.** — Most countries to-day use *four kinds of money*: (1) standard money, (2) representative money, (3) credit money, and (4) token money.

(1) **Standard money.** — *Standard money* is that money which gets its value from the value of the material of which it is made, and which gives the value to all the other kinds of money. It is an article of wealth. Gold coin is the standard money of the United States and of most other countries. The value of a gold coin is due to the value of the gold in it, and not to the government stamp on it. If you should hammer a ten-dollar gold piece on an anvil or melt it, you would no longer have a coin but just a lump of gold. Yet the lump of gold would still be worth ten dollars. It would be worth just as much as the coin was. This is what is meant by saying that standard money gets its value from the value of the material of which it is made. Also the gold coin of the United States is the money which gives value to the other kinds of money, as we shall now see.

(2) **Representative money.** — *Representative money* consists of pieces of paper, called certificates, which certify that standard money is being held by the government and will be given to the owners of the certificates whenever they ask for it. The government prints these certificates and gives them to people in exchange for standard money. Standard money must be kept by the government in exactly the same amount as the certificates which the people hold, and the government cannot use

this standard money for any purpose except to give to the people who present certificates for it. The reason for having representative money is that people would rather carry about in their pockets and keep in their cash drawers paper certificates than actually handle the heavy coins. The paper certificates serve exactly the same purpose as the coin, so long as people know that the coin is safe in the government vaults and that they can get it whenever they want to by simply presenting the certificate. Representative money is, of course, not wealth, but simply a property right to the standard money held by the government.

**United States gold certificates.** — For example, the government of the United States issues *gold certificates*. A ten-dollar gold certificate entitles the bearer to receive ten dollars in gold coin from the United States Treasury whenever he presents the certificate. On January 1, 1923, there were seven hundred and eight million dollars of these certificates, and the United States Treasury had in its vaults exactly the same amount in gold to be used only for redemption of these certificates. You can tell a gold certificate by finding engraved somewhere on it the words "gold certificate" and the sentence: "This certifies that there have been deposited in the Treasury of the United States of America ten [or some other number] dollars in gold coin payable to the bearer on demand." It happens also that our gold certificates are always printed in yellow ink on the back.

(3) **Credit money.** — *Credit money* is a promissory note of the government, or of a bank, which is used as money. It is not a certificate for standard money on deposit. It is simply the government's or the bank's promise to pay money. Neither the government nor the bank is required to keep on hand an amount of standard money equal to

the amount of credit money that the people hold. It is therefore not the same as representative money.

**Greenbacks.** — The United States issues credit money in both forms, government notes and bank notes. The government notes are the *United States notes*, commonly called "*greenbacks*." If you will look at a greenback, you will find engraved on it the words "United States note" and the sentence: "The United States of America will pay to the bearer five [or some other number] dollars." This sentence shows that it is the promissory note of the United States government. These notes are called greenbacks because their backs are printed in green ink, but that does not serve to identify them, since the backs of other paper money (except the gold certificates) are also printed in green.

**National bank notes.** — Our national bank notes also are credit money. They are the promissory notes of the national banks. Each national bank, or bank chartered by the national government, is allowed to issue its notes to be used by the people as money. If you look at a national bank note you will find engraved on it the words "national currency," and a sentence like this: "The First National Bank of Chicago [or some other bank] will pay to the bearer on demand ten [or some other number] dollars." This sentence shows that such a piece of paper money is the promissory note of a bank.

There are in the United States two other kinds of bank notes, federal reserve notes and federal reserve bank notes. They will be described later, in the chapter on the monetary system of the United States (Chapter XXVII).

(4) **Token money.** — *Token money consists of coins containing less than their nominal value of metal.* They are generally made of silver or other less precious metals,

as nickel, copper, and bronze. If made of the same metal as the standard money they are of proportionally lighter weight than the standard coins. The purpose of token coins is to serve the convenience of the people in making exchanges. The smallest standard coin is usually of fairly large denomination. For the "small change" or "fractional" money, token coins are generally used. In the American monetary system, any piece of money less than one dollar is token money; i.e., the half dollar, quarter, dime, nickel, and cent. So England has shillings, six pence, pennies, etc., and France has half francs and other small coins. In place of token coins, small-change money of paper has sometimes been used. During the Civil War we had paper half dollars, quarters, and dimes. People were inclined to make fun of them and called them "shinplasters." Paper fractional money is not very satisfactory, because the paper wears out quickly and is not so convenient to handle as coin.

Token money does not get its value from the metal of which it is made, but from the fact that the government will give standard money in exchange for token money when any one asks for it. For example, the silver in a half-dollar coin is not worth half a dollar. Neither does a nickel have five cents' worth of metal in it, nor is the metal in a cent worth a cent. But nobody cares about that, so long as he knows he can always exchange token money for standard money if he wants to. The value of the metal in token money is of little importance. The material used in making token money should be simply the most convenient one, regardless of its value, except that it must not be made of such valuable material that the metal in any coin would be worth more than the face value of the coin itself. For example, if we should make our five-cent piece of silver and the same size as at pres-

ent, there would be more than five cents' worth of silver in a five-cent coin. Then anybody who had a five-cent piece would keep it or sell it for the silver, and very soon there would be no five-cent pieces left in circulation. Something like this happened at one time in the United States. In 1834, Congress made a change in the monetary laws, which made the silver in the half dollar, quarter dollar, and dime worth more than the face value of the coins. These silver coins promptly disappeared from circulation, and Congress had to change the law so as to reduce the amount of silver in each coin. When this was done, the coins stayed in circulation.

**Token money is like credit money.** — Token money is really a special kind of credit money, since its value depends on the right to exchange it for the standard money. It is not representative money, because the government does not set aside any fund of standard money equal to the token money in circulation. But the government must give standard money in exchange for token money, which makes it like credit money. ✓

**How the amount of token money is fixed.** — The government also gives token money in exchange for standard money whenever any one asks for it. If there is not enough "small change" money in a town, the merchants ask the banks for more small coins, and the banks get what they need from the government in exchange for standard money. If, on the other hand, there is too much token money, the merchants find their cash drawers piling up with small coins. They take the surplus to their banks, which attend to securing standard money in exchange. The quantity of token money in circulation is thus automatically fixed according to the needs of the people.



**Legal tender.** — Suppose a merchant, instead of depositing surplus small coins in his bank, should offer to pay a \$500 debt with them. Would the creditor be obliged to accept the burdensome coins? Might he refuse gold coins also and insist on paper money only? To answer questions like this the law defines *legal tender* and tells which kinds of money shall be legal tender. *Legal tender is any kind of money which the law says must be accepted when offered in payment of any obligation expressed in terms of the country's money unit.* This definition must be carefully studied, for the subject of legal tender is often misunderstood.

Suppose you had made a bargain to work in a store Saturday afternoons for two dollars and a half an afternoon. At the end of the first month, the storekeeper owes you ten dollars for four Saturdays. He must pay you in money, because that was the agreement. But may he pay you in any kind of money he chooses? No. You may, according to the law, refuse to accept certain kinds of money, and insist on some other kind. To find out what kinds of money he may force you to take (if you take any at all) and what kinds you may refuse (and still get your pay), we have to look up the law and see exactly what kinds of money are legal tender in the United States. For example, we shall find that all United States gold coins are legal tender for any amount. That means that if the storekeeper offers you a ten-dollar gold piece, you cannot refuse to accept it and force him to give you any other money instead. If you do refuse it, he will not have to pay till you change your mind. On the other hand, bank notes are not legal tender. You can refuse to accept a ten-dollar bank note if you wish, and the storekeeper will have to pay in some kind of legal-tender money; in this case either gold or silver coins or gold

certificates or United States notes (greenbacks), as he chooses.

Notice that the reason the storekeeper has to pay in legal-tender money is that the agreement was expressed in *dollars*, that is, "in the country's money unit." If the agreement had been in some other terms, the legal-tender law would not have held. If you had agreed with the storekeeper to be paid in bank notes, then he could force you to take bank notes or nothing, and the legal-tender law would not apply. There is nothing to prevent people making contracts payable in any kind of money they choose, and the legal-tender law does not interfere with the carrying out of such agreements. But most business agreements are expressed simply in the money unit (i.e., in dollars in the United States) and the legal-tender law applies to all such agreements.

In a perfect monetary system, the standard money is legal tender; representative and credit money are not legal tender; and token money is limited legal tender.

**Standard money legal tender.** — *Standard money is always legal tender.* It is the very best money there is, and people should always be able to pay their debts in it. It would be very awkward if, when a man was all ready to pay a debt, the creditor could refuse to take standard money and insist on payment in something else. And there is no injustice to the creditor in forcing him to take the best money there is.

**Representative and credit money.** — It is different with the other kinds of money. Representative and credit money may not be quite so good as the standard. They get their value from the standard. The man who has sold goods or done work for money would, in a perfect system, have a right to receive the best money in payment. He might be perfectly willing to take other

kinds of money. But if he would rather have standard money, the debtor should be the one to go to the government or the bank and exchange his other kinds of money for standard money. It is not fair to make the creditor do this. Therefore, *representative and credit money are generally not legal tender*. Of course, in a sound monetary system, people regularly accept all kinds of money without regard to the question of legal tender.

**Token money limited legal tender.** — *Token money is generally limited legal tender*. It stands between standard money and representative or credit money. Token money is not standard; it is like credit money. Also it is very inconvenient to handle any large amount of token money. Imagine being paid a hundred dollars in nickels and cents. You would need a wagon to take your money home. Therefore no one should be forced to take token money against his will. But for all payments of less than the money unit, it is impossible to pay in standard money. Token money is all there is for such payments. If creditors could refuse to accept it, how could the debtors pay? Therefore the law compromises by making token money limited legal tender. That is, such money is declared legal tender for small payments only. For example, in the United States the half dollar, quarter, and dime are legal tender for all payments up to ten dollars, while the nickel and cent are legal tender for payments not greater than twenty-five cents. This makes it possible for anybody to make small or fractional payments, and creditors are not forced to take inconvenient quantities of small change money in payment of large amounts.

#### EXERCISES

1. Are people anxious to obtain money for the same reasons that they are anxious to obtain food, clothing, and other enjoyable things? Explain.

2. What qualities do the following things lack, the lack of which make them less well adapted to serve as money than gold or silver: (a) land; (b) diamonds; (c) wheat; (d) platinum; (e) automobiles; (f) famous paintings.

3. Show which of the four kinds of money each of the following is: (a) the gold eagle; (b) the half dollar; (c) the bank note; (d) the gold certificate. Can you answer also for (e) the silver dollar, and (f) the silver certificate?

4. When a tribe or race of people first begins to use money, what sorts of things are likely to serve as money among them? Why?

5. Is gold used as money by so many nations merely because the laws of these nations specify gold? Why do so many of the laws specify gold as money rather than some other thing?

6. Who determines which of the different kinds of money in the United States are legal tender?

7. Is it necessary for money to be legal tender in order to be a satisfactory kind of money? Give reasons.

**References for further study.**—Taylor, F. M., *Principles of Economics* (1921), pages 160-174. White, H., *Money and Banking*, Fifth Edition (1914), pages 1-15; 30-40. Holdsworth, J. T., *Money and Banking* (1914), pages 1-16; 37-53. Clay, H., *Economics for the General Reader*, American Edition (1918), pages 153-158. Ely, R. T., *Outlines of Economics*, Third Revised Edition (1916), pages 248-255. Seager, H. R., *Introduction to Economics* (1905), pages 302-308. Carver, T. N., *Principles of National Economy* (1921), pages 364-375. Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. I, pages 223-231.

## CHAPTER XXIII

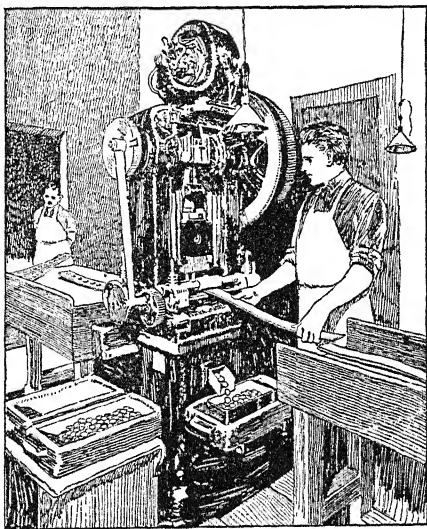
### COINAGE AND THE VALUE OF MONEY. MONO-METALLISM AND BIMETALLISM

What is coinage? — In all modern civilized nations the metallic money is coined and the paper money is printed by the government. *Coinage is the making of coins. Coins are pieces of money stamped out of metal.* No one but the government is permitted to coin money. The government has mints, at which all the country's metallic money is coined. The law tells what coins shall be made, the material of which they shall be made, and the exact weight of each coin. For example, according to United States laws, each ten-dollar gold piece contains exactly 258 grains of standard gold, which is a mixture of gold, silver, and copper, nine tenths of which is pure gold and one tenth silver and copper. The mixture of silver and copper is called the *alloy*. Its purpose is to make the coin hard and durable, since pure gold is too soft.

**Purpose of coinage.** — The purpose of coinage is to make money which people can use safely and conveniently. When the precious metals were first used as money, people used to measure out small quantities of the metal of the right value for the payments they had to make. You have probably read of the early days in California after the gold discoveries of "forty-nine," when the miners used gold dust for money. They had to weigh or measure out the gold dust for every payment.

This was clumsy and inconvenient, and there was always the chance of being cheated on the weight or receiving something that was not pure gold. When the gold is coined, everybody is sure of exactly how much gold he is getting by merely counting the coins. Everybody knows also exactly what part of any coin is pure gold or silver and what part is alloy.

Why coinage is a government monopoly. — It is for the same reasons that coinage has been made a government monopoly. With the government stamp on the coins, we are always sure that the weight and material of every coin are exactly according to law. We should not feel quite so safe if coins were made by private



IN THE UNITED STATES MINT, AT PHILADELPHIA  
This machine punches out 450 blank pieces of gold or silver a minute. Another machine stamps the coins.

business men or corporations. After the gold dust days in California, coins were made by business men and others. They were a good deal better than the gold dust money, but the situation was better still when the United States government took over the business of coinage and private coinage ceased.

The government coins not only the standard money,

which to-day is almost everywhere gold, but also all token coins and any other coins which there may be, whether they are of silver, nickel, copper, or other metal.

**Free coinage.** — *Free coinage is that system of coinage by which the government is required to coin for any citizen any amount of standard metal which he may bring to the mint.* Any citizen may bring to the mint any amount of the legal standard metal and ask to have it made into coin for him, and the mint is required by law to do so. The law states just what metal or metals have the privilege of free coinage. For example, in the United States there is free coinage of gold. Anybody may bring any amount of standard gold to the mint and have it made into gold coin for him.

**Charge for coinage.** — Some governments do this for nothing. Other governments charge something to cover the cost of coinage. When no charge is made, the government itself bears all the cost of running the mint and making the coins. This is *gratuitous* coinage. Where a charge is made, the citizen whose gold is coined has to pay merely the cost of making the coin. But in either case we have free coinage; that is, free coinage may be also gratuitous coinage, or it may not. Coinage of standard gold in the United States is now both free and gratuitous. But formerly the mint used to make a charge of one fifth of a cent on each dollar for the cost of coinage. At that time there was free coinage of gold, but not gratuitous coinage.

**Charge for assaying and refining.** — Very often people take to the mint gold which is not standard gold; that is, it is not the exact legal mixture of nine tenths pure gold and one tenth alloy of silver and copper. Often they take the crude gold ore right from the mines. In

such cases the mint charges them for the cost of assaying and refining the gold and for any alloy that has to be added in order to make standard gold. After that the mint will make the standard metal into coin without charge.

**Government control of paper money.** — Besides having a monopoly of the coinage of metallic money, the government controls all paper money; that is, representative money and credit money. This is done for much the same reasons that make it desirable to have coinage the business of the government. It is not safe to allow private individuals to issue notes or certificates to be used as money, and the law does not permit it. All paper money is issued by the government, excepting the bank notes. Even here the law tells the banks exactly how they shall issue their notes. In the United States all kinds of paper money, even the notes of the banks, are engraved and printed by the government. This makes it much easier for the people to be sure that the paper money is genuine. Great care is used by the government to make it difficult to counterfeit the paper money. A special kind of paper is used, containing little colored threads, and the designs are made very complicated and minute. If you will examine carefully any piece of paper money, you will see how difficult it would be to make an imitation that could not be detected.

**The value of standard money.** — Standard money, as we have seen, gets its value from the material of which it is made, and not from the fact of coinage. In other words, the value of a standard coin (in a free-coinage country) is always exactly the same as the value of the metal in it. Let us now see why this is so. Take for example the standard money of the United States, which consists of gold coin. A ten-dollar gold piece contains



exactly 258 grains of standard gold, and any uncoined lump of standard gold weighing 258 grains is worth exactly the same as a ten-dollar gold piece. Why is this so? The answer is to be found in two things, free coinage of standard gold bullion and melting of gold coin, together with the law of market price. The word *bullion* means uncoined gold or silver.

**Standard coin cannot be worth more than the bullion it contains.** — Suppose that, at a certain time, the gold ten-dollar piece were worth more than a lump of 258 grains of standard gold bullion. Then anybody who had 258 grains of standard gold would like to exchange it for a ten-dollar gold piece. He would even be willing to give a little extra if he had to. But there stands the United States mint, which is always ready to take any amount of standard gold bullion and make it into coin free of charge. People would therefore take their bullion to the mint and have it turned into coins, and nobody would give anything extra to exchange gold bullion for coin, since he could exchange, free of charge, at the mint. As gold bullion was made into coins, the quantity of gold bullion would decrease and the quantity of gold coins would increase. This would cause a decrease in the supply of gold bullion and an increase in the supply of gold coins. But we have learned that a change in supply causes an opposite change in price. Hence the price, or value, of gold bullion would rise and the value of gold coin would fall, till their values became equal. Therefore, so long as there is free coinage without charge, the value of standard bullion cannot be less than the value of the same weight of coin; that is, standard coin cannot be worth more than the bullion it contains.

**Standard coin cannot be worth less than the bullion it contains.** — Now, let us see what would happen in

the opposite case. Suppose that gold coin were less valuable than the same weight of standard gold bullion. Anybody who had gold coin and wanted the bullion could get it easily enough by merely melting down his coin. For example, if gold were wanted more for making jewelry than for coin, the jewelers would simply take gold coins and melt them down into bullion. As people did this the quantity of gold coins would decrease and the quantity of gold bullion would increase. The supply of bullion would increase and the supply of coin would decrease, thus lowering the value of bullion and at the same time raising the value of coin till the two values were the same. Therefore, so long as people can always melt gold coin into bullion, the value of coin cannot be less than the value of the same weight of standard bullion.

It follows, then, that the value of standard money is always equal to the value of the substance of which it is made; i.e., to its *intrinsic value*.

**The value of other kinds of money.** — All the other kinds of money get their value from their relation to the standard money. Representative money and credit money are not valued at all on account of the substance of which they are made. They are simply little pieces of paper; the paper has practically no value. Even token coins do not get their value from the metal in them. Their intrinsic value is smaller (usually much smaller) than their actual value. There is not fifty cents' worth of silver in a half-dollar piece, and the one-cent piece does not contain a cent's worth of metal. What gives actual value to all these kinds of money is the fact that they may be exchanged for standard money. They are therefore worth just as much as the same amount of standard money.

The Continental bills of credit. — The truths stated in the two preceding paragraphs are among the most important in the whole science of economics. They have, nevertheless, been misunderstood or neglected over and over again in the world's history, with disastrous results. During the American Revolution the Continental Congress, being hard pressed for funds to pay the expenses of war, issued large quantities of paper money called "Continental bills of credit." On their face these notes purported to be credit money; i.e. the promise of the Continental Congress to pay coin. But the Congress had no coin for this purpose, and no body knew when the notes would be paid or if they would ever be paid. The notes were therefore not worth as much as coin. Their value began to decline immediately and, with each new issue, went lower and lower. People refused to sell goods for the paper money except at very high prices; many refused to sell at all. Depreciation continued till the notes were worth less than one cent on the dollar. The effects on prices, wages, contracts, and life in general were disastrous. All ordinary business relations were upset. Extravagant personal expenditures and wild speculation were encouraged. It is from this experience that we get the common phrase "not worth a continental." By the close of the war the notes had become practically worthless. Most of them were lost, destroyed, or thrown away. After the adoption of the Constitution, those that were left were redeemed at the rate of one cent on the dollar.

Fiat money. — *Money which has no intrinsic value itself and is not redeemable in other money having intrinsic value is called fiat money.* The Continental bills of credit are an example. The greenbacks of the Civil War were fiat money for several years (see Chapter XXVII,

p. 277). There have been many other examples at various times in other countries. Sometimes the fiat money has consisted of government notes. Sometimes it has been the notes of banks. At the time of the World War. (1914-1918) nearly every nation of the world except the United States "suspended specie payments." That is, they ceased to give standard money in exchange for their various kinds of paper money. This made their paper money fiat money. In every such nation, the money became worth less than its face value in gold. The depreciation was moderate in England. In France and Italy it was more serious. In Germany the mark depreciated to less than one hundredth of its face value. The Russian paper money went so low that it was impossible to calculate its value. The disordered monetary systems of Europe were among the chief obstacles to the return of economic stability and prosperity after the war. All these cases and many other similar experiences confirm the economic principle that no money can be sound unless it either has intrinsic value itself or is subject to current redemption on demand in money of intrinsic value. From time to time various people bring forth new schemes for fiat money. All of these schemes are doomed to failure by their very nature.

**Gresham's law.** — If a person has a debt to pay and has in his pocket or purse some crisp new bills and some that are old and ragged, he is very likely to select the ragged ones for making payment and to keep the new bills. If there were any real difference in the value of the different kinds of money that could be used for making payment, we may be sure that everybody would keep the more valuable and pay out the less valuable. And since everybody did this, the better money would not be paid out at all and would thus cease to circulate. This

is what actually happens whenever two kinds of money of unequal value are in circulation together. *The poorer money tends to drive the better money out of circulation.* The better money is hidden away and hoarded by the people or used in payments in foreign countries where the poorer money is not acceptable. This economic principle is known as "*Gresham's law.*" It was illustrated by the experience with the Continental bills of credit, which almost immediately drove gold and silver out of circulation. The greenbacks kept gold and silver out of circulation in the United States until specie payment was resumed in 1879. During the World War gold and silver disappeared from circulation in nearly all the countries of Europe. This is always one of the unfortunate results of the issuance of fiat money or any other unsound currency.

**The monetary standard.** — As already stated, gold coin is to-day the standard money of most of the civilized world. This has not always been so. Silver has been used by some countries, and during a good part of the nineteenth century many leading nations used both gold and silver at the same time. The subject of the metal used for the monetary standard is very important and has given rise to some of the most serious practical problems connected with the monetary system. It will require careful study.

**Monometallism.** — *Monometallism is any monetary system which uses coins of only one metal as the standard money.* We may have either *gold monometallism* or *silver monometallism*, according as the standard coins are made exclusively of gold or of silver. As we have already seen, gold monometallism is the system that now prevails in the United States and in most of the other leading nations of the world.

**Bimetallism.** — *Bimetallism is any monetary system which uses as standard money both gold coins and silver coins.* In a bimetallic system, the money unit is a certain coin, which may be made either of gold or of silver. The law tells exactly the weight of gold in the gold coin and of silver in the silver coin, and the ratio between the weight of the silver coin and the weight of the gold coin is called the *coinage ratio* or the *mint ratio* or the *legal ratio*. There must be free coinage of both gold and silver, and the coins of both metals must be unlimited legal tender.

**Bimetallism in the United States.** — These matters can best be made clear by an illustration from the monetary experience of the United States. The United States had a bimetallic monetary system from the very beginning (1792) down to 1873. Since then we have had gold monometallism. Before 1873 the monetary unit was the dollar, which consisted (after 1837) of either 25.8 grains of standard gold or 412.5 grains of standard silver. Standard gold has been since 1837 nine tenths pure gold and one tenth an alloy of silver and copper. Standard silver has been since the same date nine tenths pure silver and one tenth an alloy of copper. The coinage ratio was therefore  $\frac{412.5}{25.8}$  or  $\frac{15.988}{1}$ , which is almost exactly sixteen to one. The ratio of sixteen to one means that a silver dollar weighs sixteen times as much as a gold dollar.

There was free coinage of both metals. Anybody could take standard gold to the mint and have it coined, receiving one dollar in coin for every 25.8 grains of bullion. Anybody could also take standard silver to the mint and receive in exchange one silver dollar for every 412.5 grains of bullion.

All the standard coins, both the gold coins and the silver dollar, were unlimited legal tender. A debtor could pay any obligation expressed in dollars by offering the proper amount in either gold coins or silver dollars as he chose. We had therefore a real system of bimetallism.

**How bimetallism works.** — With a bimetallic system people can pay their debts in coins of either gold or silver, and people can have either gold or silver bullion made into coin at the mint. But will people bring both metals to the mint? The answer depends on whether the *market ratio* between the two metals is the same as the *coinage ratio*. The market ratio is the ratio at which the two kinds of bullion exchange on the market. This ratio is determined by the respective supply of and demand for the two metals, which result from the operations of mining and the use of the metals for all purposes (not merely for money). Hence the market ratio changes frequently, as does the market ratio between corn and wheat or any two goods. The market ratio is not fixed by law. For example, an ounce of gold can be bought for \$20.67. Suppose that 16 ounces of silver can likewise be bought for \$20.67. Then 1 ounce of gold is worth the same as 16 ounces of silver, and the market ratio between silver and gold is 16 to 1. Suppose the coinage ratio is also 16 to 1. Then a given amount of gold will make just as much coin as 16 times its weight of silver. People would take either gold or silver to the mint. Obviously there would be no advantage in exchanging one metal for the other on the market before going to the mint.

But what if there is a difference between the coinage ratio and the market ratio? Let us suppose that, while

the coinage ratio is 16 to 1, the market ratio is 15 to 1. Then anybody who has silver will find it to his advantage to exchange it for gold on the market and take the gold to the mint. For 15 ounces of silver he would then get as much coin as could be obtained by taking 16 ounces of silver directly to the mint. Therefore only gold will be brought to the mint. Moreover, if there are already silver coins in circulation, the tendency will be to melt them down and sell the bullion. The silver coins will thus tend to disappear from circulation.

Just the opposite will happen if the market ratio is greater than the coinage ratio; for example, 17 to 1, when the coinage ratio is 16 to 1. Then it will be advantageous to take only silver to the mint, and there will be a tendency for any existing gold coins to disappear from circulation.

We thus reach the following conclusion: If the market ratio is the same as the coinage ratio, both gold and silver will be coined, and there will be standard coins of both metals in circulation. If the market ratio is less than the coinage ratio, only gold will be coined, and all the standard coins in circulation will be gold. The actual result will be the same as if there were gold monometallism. If the market ratio is greater than the coinage ratio, only silver will be coined, and the only standard coins in circulation will be silver. The actual result will be the same as if there were silver monometallism.

**Qualifications.** — To these laws must be added two qualifications. (1) It must be remembered that, when the market ratio parts company with the coinage ratio, the results stated above do not come instantaneously. All persons in the country are not immediately aware of the situation, and all are not equally keen to take



advantage of it. It will, therefore, always take some time for all the silver coins to disappear and be replaced by gold, or *vice versa*.

(2) The results that follow when the market ratio becomes different from the coinage ratio have a tendency to bring the market ratio back to the coinage ratio. For example, suppose the coinage ratio were 16 to 1 and the market ratio 15.99 to 1. As we have learned, silver will not be brought to the mint, and silver coins will tend to disappear from circulation. Since the money work is now more and more being done by gold, there is an increased demand for gold. On the other hand, the silver released from coinage increases the supply of silver for all other uses. This tends to raise the value of gold and lower the value of silver, and so to increase the market ratio between them. It might finally bring the market ratio back from 15.99 to 1 to the coinage ratio of 16 to 1. The corresponding results of a market ratio slightly above the legal ratio will be readily understood. This tendency of a discrepancy between the market and coinage ratio to correct itself, however, is not strong enough actually to bring the ratios together unless the discrepancy is very small.

**Operation of bimetallism illustrated by United States monetary history.** — These laws have been proved by the monetary history of many countries. One of the best examples is our own experience with bimetallism in the United States. When Congress first established the monetary system in 1792, it made a system of bimetallism with a coinage ratio of 15 to 1. The intention was to make the ratio the same as the market ratio, but there was a slight miscalculation. The market ratio was then about  $15\frac{1}{2}$  to 1. From the law stated on page 227, you would conclude that no gold would be brought to the

mint. This is exactly what happened, and the country had practically a system of silver monometallism for the first forty-two years.

The people wanted to have gold coined; so, in 1834, Congress changed the coinage ratio to about 16 to 1. As the market ratio was still about  $15\frac{1}{2}$  to 1, this was an error on the other side. Now nobody brought any silver to the mint. All the coins made were of gold, and the few silver dollars that had been in circulation mostly disappeared. In 1837 some slight changes were made, which still left the coinage ratio practically 16 to 1. For about forty years (1834-1873) we had what amounted to gold monometallism. In 1873, a law was passed which took away the right of free coinage of silver and made the United States monetary system real gold monometallism. It has remained so ever since. This law made no practical difference in 1873, since no one wanted to have silver coined anyway. But the very next year, the price of silver began to fall more than ever before. The market ratio, which had been about  $15\frac{1}{2}$  to 1 for nearly a hundred years, now rose to 16 to 1, which was the coinage ratio, and then went higher and higher. By 1896 it was 32 to 1, or just double the mint ratio. If the law of 1873 had not demonetized silver (that is, taken away the free coinage privilege), people would have begun to bring silver to the mint just as soon as the market ratio rose above 16 to 1; gold would have disappeared from circulation, and the country would have gone back practically to a condition of silver monometallism. As soon as the ratio rose above 16 to 1 many persons were desirous of doing this, or of having it done by others. A great demand therefore arose for the restoration of "free silver," which caused a bitter political struggle lasting for a generation.

**The experience of France.** — The nearest approach to successful operation of bimetallism was in France during the middle part of the nineteenth century. Her coinage ratio ( $15\frac{1}{2}$  to 1) was for years very close to the market ratio, sometimes a little lower, sometimes a little higher. At one time, gold coin began to disappear; at another time, the silver took flight. But each time the market ratio came back before either metal had entirely disappeared. Finally, however, with a slight fall in the price of silver after 1870, gold began to disappear, and it was apparent that both metals could no longer be kept in circulation under a system of bimetallism. France, therefore, abandoned the attempt and abolished the free coinage of silver in 1873.

**Conclusion: Bimetallism will not work.** — We see then that, even though bimetallism be established by law, there will not actually be coinage and circulation of the two metals unless the coinage ratio is practically the same as the market ratio. It is not possible to keep these two ratios the same for any great length of time. The market ratio is continually changing, even though the changes may be slight, and it would be impracticable to keep changing the coinage ratio to correspond. In spite of the temporary success in France, it remains true that no country has succeeded in maintaining permanently the actual free coinage and circulation of both metals. The conclusion is that bimetallism will not work. Whenever it has been tried the result has almost always been the actual circulation of just one metal, sometimes gold, sometimes silver. On a few occasions gold and silver have circulated together, but only temporarily, after which one has driven the other out of circulation. The leading countries of the world have therefore given up bimetallism and adopted monometallism.

## EXERCISES

1. Give a number of reasons why it is a useful thing to have money in the form of coins rather than in some other form.
2. When the owner of a gold mine takes crude gold to the mint he finds that it will cost him something to have it turned into coins. Does this mean that we do not have a system of "free" coinage?
3. During the past few years the gold miners have suffered losses because of the fact that their expenses have increased while they have been unable to raise the price of their product. Explain why the price of gold ore has not risen with other prices.
4. Why does a "dollar bill" have a value much higher than its intrinsic value? Why is the same never true of the gold eagle?
5. Define market ratio as applied to gold and silver. What determines what the market ratio will be? What determines the coinage ratio?
6. What must be true of a coinage system to make it a bimetallic system?
7. Suppose that the United States had bimetallism as its standard, with a coinage ratio of sixteen to one; suppose, further, that the market ratio became fourteen to one. Explain the steps that you could take to make a profit for yourself out of this situation.
8. Why is it impossible for the coinage ratio and the market ratio to remain equal to each other for any great length of time?

References for further study. — Fisher, I., *Elementary Principles of Economics* (1912), pages 221-239. Holdsworth, J. T., *Money and Banking* (1914), pages 16-36. White, H., *Money and Banking*, Fifth Edition (1914), pages 16-29; 40-78. Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. I, pages 261-284; 304-324. Clay, H., *Economics for the General Reader*, American Edition (1918), pages 158-168. Ely, R. T., *Outlines of Economics*, Third Revised Edition (1916), pages 255-281. Seager, H. R., *Introduction to Economics* (1905), pages 308-313. Carver, T. N., *Principles of National Economy* (1921), pages 375-393.

## CHAPTER XXIV

### BANKING. DEPOSIT AND DISCOUNT AND THE CHECK SYSTEM

What do the banks do? — Starting at the center of a town or village of any considerable size, a person does not have to go far before he comes to a *bank*. In the business section of any large city one sees numbers of banks, many of them large and busy places, with crowds of people hurrying in and out. In the course of the day nearly every business man is likely to make at least one call at the bank, or to send some one there for him. Why are the banks so important? What is it they do for the modern business world? Many people think of banks as places where they put their spare money for safe-keeping and from which they draw out their money when they need it. That is a part, but a very small part, of the business of the banks; if that were all they did, they would not be the busy places that we see to-day. Let us see what the banks really do for us.

**Deposit of money.** — First of all, the banks serve as a place for the safe-keeping of money. Anybody can take money to the bank and “deposit” it. The bank agrees to pay back the money whenever it is asked, or to pay it to some other person if the depositor so directs. The bank keeps in its ledger an account with each of its depositors. When the money is deposited, the clerk credits the depositor’s account with the sum, and he also generally writes the amount on the credit side of the

depositor's "pass book," which gives the depositor a record that he has deposited the money.

**The check.** — To withdraw money from the bank, the depositor uses a *check*. A *check* is a written order by a depositor directing his bank to pay money to a third party (or sometimes to himself or to the bank). Suppose Mr. John Greene has deposited \$1,000 in his bank, the Merchants Bank. On the first of the month, he has to pay his house rent of \$50. One way would be to go to the bank, draw out \$50, and take it to his landlord, James Garland. But a simpler way is to pay by means of a check, which would be an order, signed by John Greene, directing the Merchants Bank to pay James Garland \$50. The check would read like this:

GOWANDA, N. Y. <u>Aug. 1, 1922</u> No. <u>139</u>	
<b>Merchants Bank</b>	
PAY TO THE ORDER OF <u>James Garland</u>	
<u>Fifty <math>\frac{00}{100}</math></u>	<u>Dollars \$50 <math>\frac{00}{100}</math></u>
	<u>John Greene</u>

Checks are usually made out on blank forms similar to this, which are furnished by the banks, but such a form is not necessary. A check may be written out by hand or with the typewriter on any kind of paper.

**Cashing a check.** — Having made out this check, Mr. Greene gives it or sends it by mail to the payee, Mr. Garland. Mr. Garland may take it to the Merchants Bank and ask for the money. The bank clerk must be sure of several things before he pays. First he looks up Mr. Greene's account and makes sure that he still has

at least \$50 on deposit. The clerk must also examine the check and be certain that the signature is really that of Mr. Greene. Bank clerks are familiar with the signatures of all their customers; if they are ever not sure, they refer to a card catalogue of the signatures of all their depositors, which every bank keeps. Finally the clerk must be certain that it is Mr. Garland who is presenting the check. He may know Mr. Garland by sight. If not, he will refuse to pay till Mr. Garland is identified by some one who is known at the bank. Before receiving the money, Mr. Garland must *indorse* the check; that is, he must sign his name on the back of the check. This serves as his acknowledgment that he has received the money. It makes the check a *receipt*. All of this takes only a few seconds, if everything is correct, and then the money is paid over to Mr. Garland. The bank clerk then debits Mr. Greene's account with the \$50 which he has paid out, and sooner or later, when the account is balanced, the check will be returned to Mr. Greene. He keeps it as evidence that Mr. Garland has received the money from the bank.

**Payment by check.** — By means of checks like this Mr. Greene can pay his grocer's bill, his doctor, his stenographer, and nearly all of his expenses. If he wants to draw out money for himself, he makes out a check with his own name written as that of the payee, and presents it to the bank. The check is thus an easy and safe way of making payments. It is easy to sit in one's own home or office, make out checks, and send them by mail. It is safe — much safer than sending money — since no one but the right person can get the money, even if the check should be lost or stolen. And finally the checks always come back and serve as receipts for the payments. Careful business men and house-

keepers regularly put most of their money in their banks and make nearly all their larger payments by check.

**Depositing checks.** — Let us now consider another peculiarity of the check system. The landlord, Mr. Garland, might take Mr. Greene's check to the bank and carry away his \$50 as described on page 234; but the chances are that he would not. If Mr. Greene had paid him in money, instead of by a check, he would probably have taken the money to his bank and deposited it. Then why should he ask the bank to give him money for the check? Why not "deposit the check"? That is exactly what he would probably do. If he has an account at the Merchants Bank, he simply takes (or sends) the check in and deposits it. The process is the same as when he asked for the money. He indorses the check; the bank clerk satisfies himself that everything is correct. But instead of paying him the \$50, the clerk credits his account in the bank's ledger with \$50 and (if required) writes the amount on the credit side of his pass book, the same as if he had deposited money. It is just as if Mr. Garland had gone to the paying teller's window and drawn out his \$50 and then immediately stepped over to the receiving teller's window and deposited it. The result of this transaction is that the bank has debited Mr. Greene's account by \$50 and credited the same amount to Mr. Garland's account; that is, it has "transferred" \$50 from the one account to the other. Of course it is entirely immaterial to Mr. Greene whether Mr. Garland takes the money or deposits the check.

The amount of checks deposited in banks is far greater than the amount of money deposited. The amount of deposits that comes from money brought in by the depositors is really quite small. Of the two important



functions of the banks so far discussed, the safe-keeping of money and the making of payments by means of transfers on their accounts, the second is far more important than the first.

**Payments through one bank.** — In a small town where there is only one bank, the bank acts as a sort of agent to make payments between the citizens of the town. Practically every business man and nearly everybody else who has many payments to make keeps an account in the bank. Most of the money that these people receive is immediately deposited in the bank. And when anybody has a payment to make he generally draws a check, which the receiver deposits in the bank. By transfers on its accounts, from one depositor to another, the bank makes most of the payments of any size between the citizens of the town.

**Payments through two or more banks.** — In the large towns and in the cities, there will generally be more than one bank. This makes the business of making payments by means of checks a little more complicated. In the case of Mr. Greene's payment of \$50 rent to Mr. Garland by check, suppose that Mr. Garland does his business, not at the Merchants Bank, but at the Second National Bank of the same city. When he receives Mr. Greene's check he may go (or send) to the Second National Bank, hand in the check, and either ask for the money or ask to have the amount credited to his account. But how can he expect his bank to give him anything for this check, when Mr. Greene has no deposit account with it, and when the check is drawn upon another bank? The answer is that the Second National Bank is willing, as an accommodation to its own customer, Mr. Garland, to take the check, give him money or credit for it, and then collect the money from the Merchants Bank.

**Indorsement.** — But there appear to be some difficulties in the way. The clerk of the Second National Bank has no way of telling whether Mr. Greene has \$50 on deposit at the Merchants Bank. He does not even know whether Mr. Greene's signature on the check is genuine. He very likely never heard of Mr. Greene before. How can this bank safely pay Mr. Garland before it knows whether the check is good and whether it will be able to collect from the other bank? The thing that makes this possible is Mr. Garland's indorsement. Every check must be indorsed before it can be cashed or deposited. The indorsement shows that the person has received the amount called for by the check. It also means that the indorser guarantees that the check is good. When Mr. Garland indorses the check it means that, if the check should turn out worthless, he will have to pay back to the Second National Bank the amount that it gave him for it. So the bank clerk has only to satisfy himself that Mr. Garland has actually indorsed the check.

Sometimes a check is not taken at first to any bank, but is passed on to another individual. If Mr. Garland had happened to owe his tailor \$50 for a suit of clothes, he might have used the check to pay his bill. The tailor would then be the one to take it to a bank and cash or deposit it. Or he might in turn pass it on to some one else. A man sometimes asks a friend to cash a check as a matter of accommodation. You will often hear people asking the storekeeper with whom they trade if he can "cash a check." Thus checks may pass about among several persons before they finally reach the bank on which they are drawn. The best business practice, however, is for the payee to deposit the check in his own bank. Each person who passes on a check ordinarily

has to indorse it. That means that, in case it should not be good, he will be responsible for making good the loss of any one who receives it from him. .

**Various forms of checks.** — There are different ways of making and indorsing a check. A check may read simply: "The First National Bank, pay to John Smith," etc. Such a check cannot be paid to any one except John Smith. He cannot pass it on to any one else, or cash or deposit it at any other bank. He must himself go to the First National Bank and cash or deposit it. Checks generally read: "Pay to the order of John Smith," or "Pay to John Smith or order." Such a check may be passed on or taken to any other bank, always with indorsement at each step. Again, a check may be made to read, "Pay to John Smith or bearer" or simply "Pay to Bearer" or even "Pay to Cash." Such a check can be passed about and may be cashed or deposited by any one who presents it and indorses it. Such a check also does not have to be indorsed every time it changes hands. For these reasons it is much safer to make a check payable to the order of some particular person rather than to bearer.

**Forms of indorsement.** — The simplest form of indorsement is to write one's name on the back of the check. This "blank indorsement" means that the person guarantees the goodness of the check and has received its value from somebody. A check so indorsed can be passed on to any one and cashed or deposited by any one. It becomes a check payable to bearer. A better form of indorsement is to write on the back above the indorser's signature, "Pay to the order of ———," putting in the name of the person to whom the check is transferred. That means that that particular person will have to indorse the check before he receives anything for

it. Checks payable to bearer, either originally or by blank indorsement, are not safe to send through the mail or by messenger. If they should be lost or stolen anybody could cash them. A check made payable to a particular person, if lost or stolen, cannot be cashed except by a forged indorsement, which is of no effect as against the payee or the drawer.

**Collection between banks.** — Let us now go back to the Second National Bank, which has credited Mr. Garland's account with \$50 for Mr. Greene's check drawn upon the Merchants Bank. Toward the close of the day, or the next morning, a messenger from the bank will take this check, with the bank's indorsement on its back, over to the Merchants Bank and ask for the \$50. If the check proves good and Mr. Greene's account has at least \$50, the Merchants Bank will give the messenger the \$50, or evidence of credit for that amount, thus reimbursing the Second National Bank. The Merchants Bank will debit Mr. Greene's account and later send him the canceled check, which closes the transaction. This illustrates how checks are used for payments in places where there are two or more banks. Each bank may receive hundreds of checks during the business day, some drawn on itself, others drawn on the other banks in the town. And each day the clerks of the bank have to sort out the checks cashed and send to each of the other banks the checks drawn on that particular bank, receiving the total amount in money or credit.

**The clearing house.** — In the large cities, where there are a great many banks, the business of sending the checks around for collection would become very troublesome. Each bank would have to send a messenger to each of the other banks. In a city with twenty banks, there might have to be  $20 \times 19$ , or 380 separate calls

necessary to collect the checks each day. To save this enormous amount of labor and expense, the bankers have invented a short-cut arrangement, the *clearing house*. *The clearing house is an association of the banks of a city through which all the accounts between the banks for accepting each other's checks are settled.* Every day



IN THE NEW YORK CLEARING HOUSE

the clerks of each bank arrange the checks of other banks which were received the day before in separate bundles, one for each bank. They make out a list showing the amount due from each bank and the total due from all the banks. Then two clerks take the bundles of checks and the list and go to the headquarters of the clearing house. Here there is a large hall, with a row of desks, one for each bank, and here at a certain hour the

clerks of all the banks meet. One clerk from each bank takes his place behind his bank's desk. The other, holding the bundles of checks, stands in front of his bank's desk. At a certain signal the clerks in front walk along the row of desks, putting on the desk of each bank the bundle of checks drawn on that particular bank. In a minute or two, the checks have all been distributed, and a few moments later the desk clerk of each bank has figured up how much his bank owes to all the other banks. The results are then announced by the governor of the clearing house. The clerk of each bank now knows the total amount that his bank owes all the other banks and the total amount that all the other banks owe his bank. If his bank owes more than is owed to it, the difference is paid to the clearing house. If more is owed to his bank than his bank owes, the clearing house pays the difference to him. So by just one payment to or from the clearing house, each bank settles its accounts with all the other banks. Of course the payments from the clearing house will always be exactly equal to the payments to it, so that the clearing house itself always comes out even.

**Out-of-town collections.** — Checks are often used to make payments in other towns. A merchant in a small town may buy goods from a wholesale store in a distant city. He will probably pay his bill by a check drawn on his own bank, which he will send by mail to the wholesaler. The wholesaler indorses the check and deposits or cashes it at his own bank. This gives the city bank a claim against the town bank, which the latter will have to pay. Every day thousands of checks are passing back and forth in every direction in the mails, and every day banks are receiving checks drawn on other banks all over the country. These checks all have to be sent

back to the original banks on which they are drawn, which banks have to reimburse the banks that have accepted their checks. There is an elaborate system among the banks, by which this business is handled with very little transferring of money.

Through the use of checks, payments amounting to billions of dollars are made every year simply by means of transfers on the books of the banks and without the use of any money at all. In fact far more payments are made in that way than by the use of money. It has been estimated that at least four fifths of the payments in the United States are thus made without the use of money.

**Discount.** — We come now to the most difficult, but the most important, part of the work of the banks, the business of *discount*. As is stated in Chapter XXI, most business men depend largely on borrowed capital. And it is the banks that do most of the lending to business men.

The banks always have some money on hand which has been deposited with them. Part of this the banks can lend to their customers who want to borrow. In this way the banks act as a sort of intermediary between lenders and borrowers. But if the banks did only this, their business would not amount to much. Lending money obtained from depositors is a very small part of the business of the banks. To understand this matter, let us start with a simple example.

Mr. Black is a merchant, in the seed business. In the winter he is buying his stock of seeds for the spring trade. He needs about \$50,000, besides the money he has of his own. So he goes to his bank and asks for a loan of \$50,000. If the bank is satisfied that he can be counted on to repay, it may take Mr. Black's promissory

note for \$50,000 and give him the money, less the interest. When banks lend, they usually collect the interest at once instead of leaving it to be paid when the principal of the loan is repaid. Suppose Mr. Black's note is for 3 months and the rate of interest charged by the bank on that day is 8%. The interest on a loan of \$50,000 for 3 months at 8% is \$1,000. The bank would then give Mr. Black \$49,000 for his promise to pay \$50,000 in three months. This is why the word "discount" is used.

**Definition of discount.** — *Discount is either (1) the deduction for interest made by a bank, or (2) the process of making a bank loan.* The two senses in which the word is used will cause no difficulty. The sum which the borrower receives, i.e., the face of the note less the discount, is called the *proceeds*.

**Discount and deposit.** — The \$49,000 which the bank gave Mr. Black for his note would probably not be in cash. If Mr. Black insisted on taking the money away, the bank would not be very likely to lend to him. And Mr. Black himself does not want the actual money. He doesn't use money to buy his seeds; he pays by check. If he had \$49,000 in money, the first thing he would do would be to deposit it in his bank. When he borrows from the bank, then, he simply asks the bank to credit his deposit account with the \$49,000. So the bank has received his note and he has received a deposit of \$49,000; no money has changed hands at all.

This is the ordinary way in which bank loans are made and bank deposits originate. Some bank deposits come from money deposited in the bank, as we have seen. More deposits come from checks deposited, as we have also seen. But both of these ways of making deposits are of small importance compared with the method which we are now studying. The great bulk of deposits comes



directly from discounts. Discount and deposit go together. Customers secure loans at the bank—*discount*. What they borrow is not money, but *deposits*. Let us now have a definition of deposits that will cover all cases. A *bank deposit is a right to receive money from a bank (ordinarily) on demand*. Deposits are not “money in the bank.” Banks never have on hand money anywhere near equal to the amount of their deposits. That could hardly be expected, since most of their deposits, as we have seen, originate without any money being given in. A bank with deposits of \$300,000 might have only \$50,000 of money on hand. People are mistaken when they say, for example: “The bank has \$5,000 of my money,” or “I have \$5,000 in the bank.” Actually the bank does not have their money. Even if they deposited money, the bank has probably paid it out long ago. What the depositors have is not “money in the bank,” but the right to draw money from the bank whenever they wish. This is ordinarily just as good as money, so long as the depositor knows he can get money whenever he wants it.

**The bank's reserve.**—The bank does not have to keep money on hand equal to its deposits, but it does have to pay money to any depositor whenever he demands it. Of course if all the depositors should demand their money at the same time, the bank could not pay. But the bankers know that depositors will not ordinarily do this. On many days a bank's receipts equal (or exceed) its payments. Bankers keep enough money on hand to pay all who are likely to ask payment from day to day, with a reasonable margin for safety. *The money which a bank has on hand is called its reserve*, because it is this money upon which the bank must rely to pay depositors.

**Deposit is an exchange.** — Making a deposit in the bank is really an *exchange*. The depositor gives the bank either money, or a check, or a promissory note. These things become absolutely the property of the bank. When a person deposits money in the bank, the money is no longer his; it belongs to the bank. The same is true of a check or a note. In exchange the bank gives the depositor the right to draw a certain amount of money on demand; that is, a deposit. This right, this deposit, becomes the property of the depositor. If this were generally understood, it would prevent many common mistakes about banks and banking.

**Forms of loans: (1) The borrower's promissory note.** — Let us now look further into the important function of discount. There are various kinds of loans. The first form is the *simple promissory note* of the borrower, such as Mr. Black gave (pages 242-243). Usually, a bank will not accept such a note unless it is either signed by another person or accompanied by security. Mr. Black may ask a friend to sign the note, either just below his own signature or as an indorser. This makes both men responsible to the bank for the payment of the note. If Mr. Black should fail to pay, his friend would have to. Such a note is called "two-name paper," and is generally acceptable to the banks. Sometimes "three-name paper" is required.

**(2) The secured note.** — Another way for Mr. Black to borrow on his own note is to give *collateral security*. This means that he hands over to the bank some property of his worth at least as much as the amount of his note. The bank keeps this property until he pays his note, and if the note is not paid, the bank can sell the property and so get the money that is due. The property most commonly used as collateral security

consists of stocks and bonds of corporations or of governments.

(3) **The indorsed note.** — Here is another kind of loan. Mr. Brown is a wholesale furniture dealer. He sells \$10,000 worth of furniture to a retailer, Mr. Gates, who instead of paying him money gives his note promising to pay the money in sixty days. Mr. Brown cannot wait so long, since he has bills to pay at once. He therefore takes Mr. Gates's note to his bank and "discounts it." He first indorses it, by signing his own name (as is done with a bank check); this makes him responsible as well as Mr. Gates for the payment of the note, making the note "two-name paper." The bank takes the note and gives Mr. Brown a deposit of \$10,000 less the discount. Sixty days later, when the note is due, Mr. Gates must pay the bank instead of paying Mr. Brown.

(4) **The draft or acceptance.** — Instead of giving a note to Mr. Brown, Mr. Gates might have "accepted" Mr. Brown's *draft* on him, payable in sixty days. The relation of the parties would be very much the same as in the case of the note just described. The draft would be an order drawn by Mr. Brown, directing Mr. Gates to pay \$10,000 to Mr. Brown's bank in sixty days. Across the face of the draft Mr. Gates writes "accepted" and his signature, which is a promise by him to pay it when due. The acceptance is "two-name paper," which the bank will discount, because Mr. Brown is responsible for its payment if Mr. Gates fails to pay.

All of the various forms of business men's notes and drafts are called "*commercial paper*."

**The bank's profit.** — In each of these four cases the borrower receives a right to draw money from the bank whenever he wishes, while the bank receives a right to

receive money at some definite date in the future. The amount which the bank expects to receive is always somewhat greater than the deposit which it gives, since the bank always "discounts" the notes by taking out interest. This is where the banks make their profit on the business of discount and deposit.

#### EXERCISES

1. Deposits are defined as "rights to draw against a bank." In how many ways may these rights be obtained? Explain each.
2. Write out the different forms of checks described in this chapter and explain the important differences between them.
3. Write out the different forms of indorsement and explain the important differences between them.
4. What is a clearing house? Tell what it does and explain the work of clearing.
5. What do the banks of a city gain by having a clearing house?
6. Define "commercial paper" and state the different forms that it may take.
7. When a business man deposits in a bank five hundred dollars in gold, to what different uses may the bank put this money? What would be the reason in each case for the bank's action?
8. When two men have deposits in the same bank and one of them gives the other a check, does the transaction change the bank's assets and liabilities? Explain.
9. A bank discounts Mr. Clark's \$5,000 note for six months, using an interest rate of five per cent. How much does the bank pay Mr. Clark for the note? In how many different ways may Mr. Clark receive payment from the bank for this note?
10. Summarize the different forms of loans and describe each.

References for further study. — Dunbar, C. F., *Chapters on the Theory and History of Banking*, Second Edition (1900). White, H., *Money and Banking*, Fifth Edition (1914), pages 193-204; 216-231. Holdsworth, J. T., *Money and Banking* (1914), pages 121-126; 188-213. Westerfield, R. B., *Banking Principles and Practice* (1921), (see Table of Contents). Fiske, A. K., *The Modern Bank* (1904), (see Table of Contents). Clay, H., *Economics for the General Reader*, American Edition (1918), pages 169-180. Scager, H. R., *Introduction to Economics* (1905), pages 323-336.

## CHAPTER XXV

### BANKING OPERATIONS AND ACCOUNTS. BANK NOTES

**The bank statement.** — The business of banking will be made clearer by a study of the property accounts of banks. What is said about property accounts or balance sheets in Chapter V holds true of bank statements, but some details in bank statements need special study.

**Definition of a bank.** — First, let us agree upon a definition of a bank, based upon the preceding chapter. *A bank is an establishment (usually a corporation) engaged in the business of deposit, discount, and exchange of money and credit.* It may perform certain other functions also.

**Starting a bank.** — A banking corporation is organized about as any corporation as described in Chapter XIII. The first statement or balance sheet of a bank might read as follows:

STATEMENT OF THE TRADESMAN'S BANK, OCTOBER 1, 1922			
<i>Assets</i>		<i>Liabilities</i>	
Cash.....	<u>\$100,000</u>	Capital stock.....	<u>\$100,000</u>

The bank buys land and a building, office furniture, etc., for \$20,000, which makes its statement read:

STATEMENT OF THE TRADESMAN'S BANK, OCTOBER 5, 1922			
<i>Assets</i>		<i>Liabilities</i>	
Real estate.....	\$18,000	Capital stock.....	\$100,000
Furniture, etc.....	2,000		
Cash.....	80,000		
	<u>\$100,000</u>		<u>\$100,000</u>

**Deposit of money.** — Next day two customers, Mr. Jones and Mr. Brown, come in and deposit \$5,000 in money, Mr. Jones \$1,000 and Mr. Brown \$4,000. This of course adds \$5,000 to the bank's cash. It also makes deposits of \$5,000. Deposits are a liability of the bank, because they are rights of others against the bank. Deposits are, of course, assets of the depositors. The statement will now read:

## STATEMENT OF THE TRADESMAN'S BANK, OCTOBER 6, 1922

<i>Assets</i>		<i>Liabilities</i>	
Real estate.....	\$ 18,000	Capital stock.....	\$100,000
Furniture, etc.....	2,000	Deposits.....	5,000
Cash.....	85,000		
	<u>\$105,000</u>		<u>\$105,000</u>

**Cashing a check.** — Next day Mr. Jones draws a check for \$350 to buy furniture for his dining room, and the furniture dealer comes to the bank and cashes the check. This will take away \$350 of the bank's cash, and will reduce Mr. Jones's deposit account by the same amount. The statement will then read:

## STATEMENT OF THE TRADESMAN'S BANK, OCTOBER 7, 1922

<i>Assets</i>		<i>Liabilities</i>	
Real estate.....	\$ 18,000	Capital stock.....	\$100,000
Furniture, etc.....	2,000	Deposits.....	4,650
Cash.....	84,650		
	<u>\$104,650</u>		<u>\$104,650</u>

**Making a loan.** — Now suppose Mr. Brown, who has a dry-goods store, comes in to arrange for a loan. He gives the bank his note for \$25,000 payable in 3 months. The bank is charging 6% interest, and the interest on this note is therefore \$375. The bank gives Mr. Brown credit for the proceeds, \$24,625, as a deposit. How will

this transaction affect the bank's statement? In the first place the bank has acquired a new piece of property, Mr. Brown's note. This must be put down among the assets; the term generally used for such assets is "loans and discounts." Then the bank must add to its deposits the \$24,625 which it gave Mr. Brown in exchange for his note. But now the statement will not balance. What is lacking? The discount. This is the profit of the bank, due to the fact that the transaction increased its assets more than it increased the liabilities. Profits, as we have learned (page 101), are entered on the liability side of the property account. The entry "Undivided profits, \$375" on the liability side, makes the statement balance:

STATEMENT OF THE TRADESMAN'S BANK, OCTOBER 8, 1922

<i>Assets</i>	<i>Liabilities</i>
Loans and discounts. . . . \$ 25,000	Capital stock. . . . . \$100,000
Real estate. . . . . 18,000	Undivided profits. . . . . 375
Furniture, etc. . . . . 2,000	Deposits. . . . . 29,275
Cash. . . . . 84,650	
<u>\$129,650</u>	<u>\$129,650</u>

**Transfer by check.** — Now suppose that Mr. Jones pays his bill at the dry-goods store of Mr. Brown by means of a check for \$37.25, and that Mr. Brown deposits the check in the bank. How will this affect the bank's statement? Not at all. The bank simply deducts \$37.25 from Jones's account and adds \$37.25 to Brown's account. It is merely a transfer of \$37.25 from one account to the other, and the total amount of the bank's deposits is not changed.

**A typical statement.** — Suppose during the next three months the bank does a flourishing business, making a large number of loans, so that its loans and discounts go up to \$375,000, its deposits to \$375,275, and that the

discount on these loans amounted to \$4,000, of which it transferred \$3,000 to "surplus." Let us assume the other items unchanged, except that from now on the cash item will be called the "reserve," which is the term generally used by bankers. The statement will then read:

## STATEMENT OF THE TRADESMAN'S BANK, JANUARY 7, 1923

<i>Assets</i>	<i>Liabilities</i>
Loans and discounts. . . . . \$375,000	Capital stock. . . . . \$100,000
Real estate. . . . . 18,000	Surplus. . . . . 3,000
Furniture, etc. . . . . 2,000	Undivided profits. . . . . 1,375
Reserve. . . . . 84,650	Deposits. . . . . 375,275
<u>\$479,650</u>	<u>\$479,650</u>

**Paying a loan.** — On the next day Mr. Brown's \$25,000 note is due, and he comes in and pays it by handing in \$10,000 in cash and a check for \$15,000 on his deposit account in the bank (in reality he would ordinarily deposit the \$10,000 and give the bank a check for the whole \$25,000). The bank gives him back his note. This transaction reduces the bank's loans and discounts by \$25,000, increases its cash by \$10,000, and reduces its deposits by \$15,000. Therefore the statement will read:

## STATEMENT OF THE TRADESMAN'S BANK, JANUARY 8, 1923

<i>Assets</i>	<i>Liabilities</i>
Loans and discounts. . . . . \$350,000	Capital stock. . . . . \$100,000
Real estate. . . . . 18,000	Surplus. . . . . 3,000
Furniture, etc. . . . . 2,000	Undivided profits. . . . . 1,375
Reserve. . . . . 94,650	Deposits. . . . . 360,275
<u>\$464,650</u>	<u>\$464,650</u>

**Buying securities.** — Banks generally invest some of their resources in stocks and bonds of corporations and other securities. Suppose this bank buys stocks and bonds for \$25,000. This will make the statement read:



## STATEMENT OF THE TRADESMAN'S BANK, JANUARY 9, 1923

<i>Assets</i>	<i>Liabilities</i>
Loans and discounts. . . . . \$350,000	Capital stock. . . . . \$100,000
Stocks and bonds. . . . . 25,000	Surplus. . . . . 3,000
Real estate. . . . . 18,000	Undivided profits. . . . . 1,375
Furniture, etc. . . . . 2,000	Deposits. . . . . 360,275
Reserve. . . . . 69,650	
<u>\$464,650</u>	<u>\$464,650</u>

**Note issue.** Similarity of notes and deposits. — There is still one important function of banks to be studied; i.e., *note issue*. A bank note is a bank's promise to pay money on demand. Not all banks issue notes. Those that do, give them out generally in return for commercial paper when they make loans. The bank notes thus serve the same purpose as deposits. They are a liability of the bank, just as deposits are. People who hold bank notes have the same kind of property right as those who have deposits; i.e., the right to receive money from the bank on demand. A customer of the Tradesman's Bank comes in and discounts a note for \$15,000, the discount being \$150 and the proceeds \$14,850, and if he takes the proceeds in notes, the effect on the bank's statement will be the same as if he had taken a deposit, except that the \$14,850 is entered as notes instead of added to deposits. The statement would be:

## STATEMENT OF THE TRADESMAN'S BANK, JANUARY 10, 1923

<i>Assets</i>	<i>Liabilities</i>
Loans and discounts. . . . . \$365,000	Capital stock. . . . . \$100,000
Stocks and bonds. . . . . 25,000	Surplus. . . . . 3,000
Real estate. . . . . 18,000	Undivided profits. . . . . 1,525
Furniture, etc. . . . . 2,000	Notes. . . . . 14,850
Reserve. . . . . 69,650	Deposits. . . . . 360,275
<u>\$479,650</u>	<u>\$479,650</u>

**Differences between notes and deposits.** — This shows the similarity between notes and deposits. There are, however, some important differences. Bank deposits can be transferred only by means of checks. A person cannot safely receive a check unless he is acquainted with the person who gives it to him and knows that he is honest. He must know that the signature and indorsements are genuine and that the maker has a deposit in the bank. Otherwise the check is not good. People who are not in the habit of doing business with banks are unwilling to receive checks and do not know what to do with them. Checks are therefore not convenient for making payments to strangers or for paying wages to laborers. Checks, in other words, are not *money*, because they are not “generally accepted.” They are safer and more convenient than money for certain kinds of payments, as we have learned, but for other payments they will not do.

Bank notes, on the other hand, are money. Whoever receives one has the promise of a bank, which he is confident will be good. Bank notes are “generally accepted.” They can be used for all kinds of payments. They pass about from hand to hand, often for months or years before being presented to the bank for payment. They travel far away from the bank of issue. If you look through a pocket full of paper money, you are likely to find notes of banks in far-away cities as well as those near at hand. Bank notes are engraved in round numbers of dollars, convenient for making payments of any amount. The check is made out for a particular payment, in some odd amount of dollars and cents, and it is generally used only for one transaction, after which it goes to the bank and is canceled.

**Legal regulations of note issue.** — An important difference between bank notes and deposits is the amount

of regulation by the government. Banks have generally been allowed to handle their deposits with very little interference by the government. The issue of notes is almost everywhere strictly regulated by law. The laws fix the amount of notes which the banks may issue, they require a certain amount of cash reserve, they prescribe the form and denomination of notes, etc. In most countries only certain kinds of banks are allowed to issue notes at all. Often the issue of notes for a whole nation is in the hands of one great central government bank, as in England and France. In the United States, only the national banks and the federal reserve banks are allowed to issue notes. This subject is covered in the following chapters on the banking and monetary system of the United States. It should be noticed that the issue of notes is not necessary to enable a bank to perform all the ordinary banking functions. Deposits are sufficient.

**The reserve ratio.** — A bank makes its profit by making loans. It is interested in having a large amount of loans and discounts. When it makes loans it generally gives deposits or notes. A large amount of loans and discounts on the asset side of its statement means therefore a large amount of notes and deposits on the liability side. These items rise and fall together. But the bank must always be ready to pay its deposits and notes on demand. They must be paid in cash, for which purpose the bank keeps its reserve. Inability to pay cash on demand means that the bank has failed, a very serious thing in banking. Experience teaches the banker about what is a safe ratio between his reserve and his demand liabilities, notes and deposits. If the deposits and notes become very large, the reserve may be too small for safety. The banker's desire for profits is therefore checked by the necessity of keeping a safe ratio between

reserve and demand liabilities. Some bankers are reckless and "progressive" and expand their notes and deposits till their reserve ratio is very low. Others are cautious and "conservative"; they always keep a large and safe reserve ratio.

**Control of the reserve ratio.** — There are three ways of controlling the ratio between reserve and deposits and notes: (1) by buying and selling securities, (2) by rediscounting loans, and (3) by changing the rate of discount.

**Buying and selling securities.** — The first is quite simple. Suppose a bank statement on a certain date is:

<i>Assets</i>	<i>Liabilities</i>
Loans and discounts....\$450,000	Capital stock.....\$100,000
Stocks and bonds..... 100,000	Surplus..... 15,000
Real estate, furniture, etc..... 50,000	Undivided profits..... 10,000
Reserve..... 75,000	Notes..... 35,000
	Deposits..... 515,000
<u>\$675,000</u>	<u>\$675,000</u>

The ratio of reserve to notes and deposits,  $\frac{75,000}{550,000}$ , is a little less than 14%. The banker can increase his reserve, and so increase the ratio, by selling some stocks and bonds. If he sells, say, \$50,000 worth, his reserve will go up to \$125,000, which will make the ratio  $\frac{125,000}{550,000}$ , or about 23%. This will put the bank in a safer position to meet the demands of its noteholders and depositors. On the other hand, if the banker thinks his reserve ratio is larger than necessary, he can buy some stocks or bonds. Say he buys \$25,000 worth. This will reduce his reserve to \$50,000. The ratio will be  $\frac{50,000}{550,000}$  or slightly over 9%. The bank's income will be

increased, since \$25,000 of cash, formerly lying idle in the bank, is now invested in securities paying interest and dividends. But the bank is not in so safe a position as before.

**Rediscounting.** — Instead of selling stocks and bonds to strengthen its reserve, a bank may sell some of its loans. By offering them at something less than their face value (depending on the time that must elapse before they are due and also upon the prevailing rate of interest) the bank will generally be able to find purchasers, either other banks or brokers. This process is called "rediscounting" and will be more fully explained in the study of the federal reserve system in the next chapter.

**Control by means of the rate of discount.** — A far more important regulator of the reserve ratio is the bank's rate of discount. Let us see how this works. The statement just given showed a bank with loans and discounts amounting to \$450,000. That was the amount that the bank had on hand at the particular time when the statement was made. However, this amount is always changing. Every day the bank makes new loans. And every day some loans, made one or two or three months ago, are falling due and being paid, the notes being returned to the borrowers. Thus the amount of loans and discounts is always going up or down according as the amount of new loans made is greater or less than the amount of the old loans paid off. If loans are made and paid off at about the same rate, the amount of loans on hand remains about the same, although the particular notes held are changing all the time. If, however, the banker could do anything to speed up or slow down his rate of making new loans, he could increase or decrease his loans and discounts. This is just what the banker does by making changes in his rate of discount.

Suppose our banker decides that his reserve ratio (14%) is too small. He has been charging 6% discount on his loans, and at that rate his new loans have been keeping about equal to the old loans paid off. Now he decides to raise his discount rate to 8%. What is the result? He is charging a higher price for the service of making loans, and therefore, by the law of demand, fewer people will want them now that the discount rate has gone up. Old loans will continue to be paid off as usual, and so the amount of loans and discounts will decrease. But what happens when customers pay off their loans? They must pay either in cash (or in checks or notes on other banks, which are as good as cash) or in notes or in checks on their deposit accounts, and since loans are being paid off faster than new ones are being made, the result is that the bank's cash increases and its notes and deposits decrease. To see the final result, let us suppose that the banker has in a week's time reduced his loans and discounts by \$75,000, increased his cash by \$15,000, reduced his deposits by \$50,000, and reduced his notes by \$10,000. It is clear that (other things being equal) the increase in cash plus the decreases in notes and deposits must be equal to the decrease in loans and discounts. The statement will now read:

<i>Assets</i>	<i>Liabilities</i>
Loans and discounts. . . . . \$375,000	Capital stock. . . . . \$100,000
Stocks and bonds. . . . . 100,000	Surplus. . . . . 15,000
Real estate, furniture, etc. . . . . 50,000	Undivided profits. . . . . 10,000
Reserve. . . . . 90,000	Notes. . . . . 25,000
	Deposits. . . . . 465,000
<u>\$615,000</u>	<u>\$615,000</u>

This means a considerable increase in the reserve ratio, which is now  $\frac{90,000}{490,000}$ , or 18%, instead of 14% as it was

before. The bank's position has been considerably strengthened.

On the other hand, if the banker should lower his discount rate to 5%, he would increase his loans and discounts, which would increase his notes and deposits and probably reduce his cash, with the result that the reserve ratio would go down below 14%. The bank would be doing a bigger business and probably making more profits, but its condition would be less safe. The rate of discount is thus a sort of control lever by which the banker regulates his business, steering a middle course between his desire for large profits and his fear of being caught unable to pay the demands of his depositors and noteholders.

**Elasticity of currency.** — One of the chief functions of the banks is to give *elasticity* to the country's currency system. *Currency* is a word which includes money and all other things that serve as a medium of exchange. The most important thing included besides money is bank deposits. We have seen that in the United States at least four fifths of the payments are made by means of bank deposits, transferred by check. What is meant by elasticity of the currency, and why is it necessary?

Any one who lives in a farming section knows that business is lively and money plentiful during the harvest season. Large sums of money are being paid to farm laborers and the stores are selling more than usual. Such a community needs a good deal more money in circulation at the harvest season than at other times of the year. In a manufacturing town there is an extra need for money on Saturdays, when the pay envelopes are handed out. Most salaries, on the other hand, are paid on the first of each month, and many people settle their accounts at the stores near the beginning of the month.

So the need for currency is especially great during the first few days of each month. Again, corporations generally make their dividend and interest payments quarterly, the usual dates being the first of January, April, July, and October. This makes a special need for currency on these dates. In short, a country's currency requirements are not steady and uniform; the amount of currency needed is changing all the time. To meet this varying need, the currency system ought to be elastic; that is, the amount of currency should vary to correspond with the varying needs. If the currency is not elastic, serious difficulties come, especially at the times of extra money need.

*original*  
**Elasticity furnished by bank notes and deposits.** — Most countries depend on the banks to give elasticity to the currency. Both deposits and bank notes are very elastic. We have seen that they ordinarily arise out of the demands of business men for loans. When business is active, the demand for loans is especially great, and the banks increase their deposits and their notes. The extra payments are thus made by checks and notes. When the need for money is less, loans are paid off, deposits decline, notes are returned to the banks, and ~~fewer checks are drawn~~. So the quantity of bank notes and deposits is elastic; it expands and contracts with business needs.

**Trust companies.** — The banking business which we have studied so far is that of the "commercial banks." This is the ordinary kind of bank with which we are most familiar, such as the national and state banks in the United States. But there are various other kinds of banks, and also trust companies. Trust companies are corporations very similar to the banks. They generally perform all the functions of the commercial banks and



in addition do an important business in taking care of their customers' investments, handling trust funds, and administering estates.

**Savings banks.** — Of the other kinds of banks, we shall study just one, the *savings banks*. *Savings banks are institutions which receive deposits (usually in small amounts) and make investments for their depositors.* People may deposit money or checks in a savings bank just as in a commercial bank. But the deposits cannot be withdrawn or transferred by means of checks. The method is more complicated; it requires a special order and the presentation of the depositor's pass book. Also the depositor does not have the right to withdraw his deposits on demand. The savings bank may require him to give notice of 30 or 60 or more days before he withdraws any of his money, though it commonly does not insist on this requirement. Savings bank deposits are therefore not used by business men and others for making payments, as are deposits in the commercial banks. People deposit in the savings banks money which they have saved and want to have kept and invested for them. The savings banks invest the money where it will yield an income in interest and dividends. This enables them to pay interest to the depositors. Savings bank deposits normally pay interest, whereas interest is seldom paid on ordinary deposits in the commercial banks. The customers of the savings banks are generally the poorer people, women and children, and men not engaged in business. For these people, the savings banks perform a most useful service in protecting their savings and making them earn a small but fairly certain income. Wealthy people and active business men know how to make their own investments in more profitable ways. They seldom use the savings banks.

## EXERCISES

1. Draw up the statement of the First National Bank, using the following items: Stocks and bonds, \$20,000; Real estate, \$40,000; Furniture, \$20,000; Capital stock, \$50,000; Reserve, \$30,150; Surplus, \$35,000; Loans and discounts, \$108,500; Undivided profits, \$16,250; Deposits, \$117,400.

(a) Suppose a client discounts a \$10,000 note for three months at 6% interest, taking payment in the form of bank notes. What changes would this transaction cause in the statement?

(b) Suppose, instead, that checks drawn upon this bank totaling \$10,000 are cashed by the bank, payment being made in bank notes. How would the original statement be changed?

(c) If these checks were paid in gold instead, how would the original statement be changed?

(d) What is the reserve ratio shown by the original statement? What would be the reserve ratio after the transaction given in (c)?

2. At what seasons in your own neighborhood does the need for currency increase? Why?

3. What can the banks do to meet the increased demand for currency at certain seasons?

4. How does a savings bank differ from a commercial bank?

5. Using the statement given in Question 1, show what the bank may do to increase its reserve ratio. Explain the effects of each method upon the statement.

References for further study.—Dunbar, C. F., *Chapters on the Theory and History of Banking*, Second Edition, (1900). Holdsworth, J. T., *Money and Banking* (1914), pages 98-120; 143-150; 164-187; 246-277; 286-329. White, H., *Money and Banking*, Fifth Edition (1914), pages 205-215. Westerfield, R. B., *Banking Principles and Practice*, (1921), (see Table of Contents). Fiske, A. K., *The Modern Bank* (1904). Clay, H., *Economics for the General Reader*, American Edition (1918), pages 180-194. Seager, H. R., *Introduction to Economics* (1905), pages 336-338. Carver, T. N., *Principles of National Economy* (1921), pages 394-415.

## CHAPTER XXVI

### THE UNITED STATES BANKING SYSTEM

**Purpose of the next two chapters.** — Every nation of the world has its own peculiar system of money and banking. They are all about alike as regards the general principles which have been studied in the four preceding chapters, but there is great variety in practical details. This chapter and the following are devoted to a study of the monetary and banking system of the United States, with two purposes in view. The first is to illustrate and make clearer the general principles already studied. The second is to include the important practical facts which every citizen ought to know about his own country's monetary and banking system.

**Kinds of commercial banks.** — In the United States, commercial banking is carried on by private banks, state banks, trust companies, and national banks, with the federal reserve system at the head. The state banks and trust companies are corporations receiving their charters from the state governments and regulated by the laws of the states. The national banks and the federal reserve banks are chartered and regulated by the United States government.

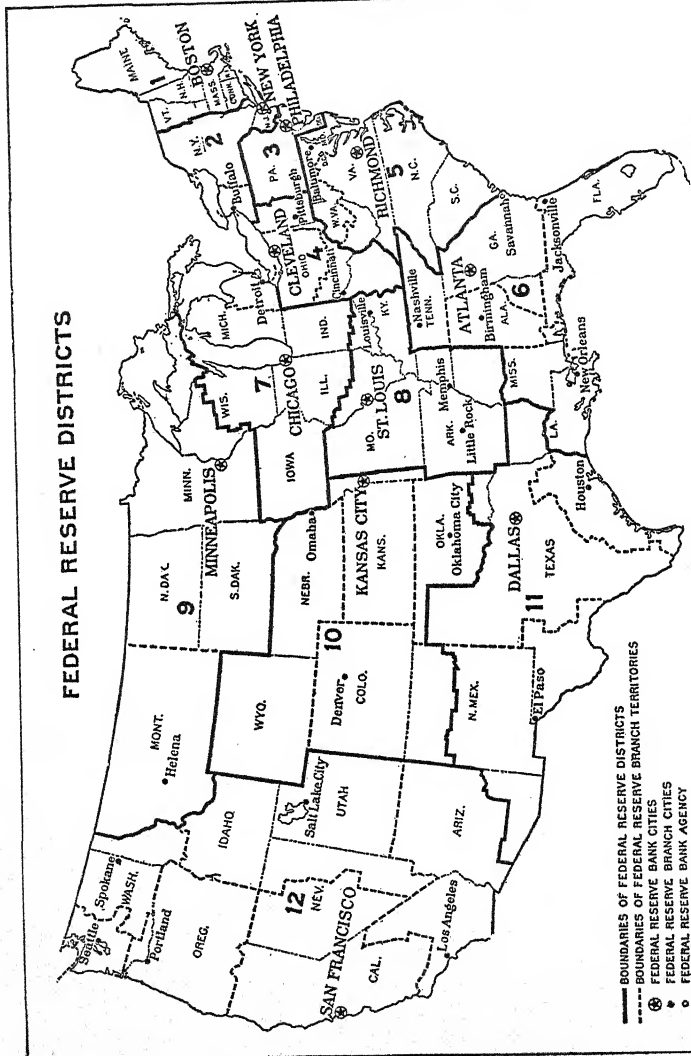
**Legal restriction of banking business.** — All these banks carry on the ordinary banking operations of discount and deposit. This part of the business of banking has been left comparatively free from legal interference, and it operates in the United States practically as described in the two preceding chapters. On the other hand,

the issue of bank notes has been very much restricted by law. It is here that we find the greatest variety among the banking systems of the different nations. This chapter will therefore give more attention to note issue than to the other banking functions.

**National bank notes.** — In the United States the national banks are the only banks (except the federal reserve banks) that are permitted to issue notes. Their notes are secured by United States bonds. Each bank, before issuing notes, must purchase such bonds and deposit them in the United States Treasury. It may then issue its notes up to the par value of the bonds, but never in excess of its capital stock. The United States government is required by law to pay any national bank note on demand, and in case of failure of a national bank, all its notes are paid by the government. As security the government holds the bonds deposited by the bank. The individual never has to worry about the goodness of a bank note, since he can always call upon the government to pay it.

**National bank notes inelastic.** — This kind of bank note, secured by deposit of bonds, is peculiar to the United States national banking system. Hardly any other country requires such security. It largely destroys the similarity between notes and deposits which we have learned is the rule. In particular it destroys the elasticity of our note issue. Since government bonds have to be bought and deposited before notes can be issued, the banks cannot quickly expand their note issue when there is special need of currency. And since they are secured by bonds which bear a low rate of interest and cannot be sold profitably on short notice, the banks try to keep all their notes in circulation all the time and so do not contract their note issues at times when the community's

# FEDERAL RESERVE DISTRICTS



- BOUNDARIES OF FEDERAL RESERVE DISTRICTS
- BOUNDARIES OF FEDERAL RESERVE BRANCH TERRITORIES
- ⊕ FEDERAL RESERVE BANK CITIES
- FEDERAL RESERVE BRANCH CITIES
- ◊ FEDERAL RESERVE BANK AGENCY

need of currency is small. Moreover, the amount of notes issued by the national banks always depends more upon the prices at which government bonds can be bought and sold than upon the country's need of currency. In our system, elasticity has been sacrificed for the sake of safety.

The national banking system was established at the time of the Civil War, and from then down to the year 1913 the United States suffered severely from the lack of an elastic system of note issue. Our bank deposits have been elastic and have performed their part in meeting the varying demands for currency. But as we have seen (page 253), for certain kinds of payments, especially for wages, bank deposits (i.e. checks) will not do. For such payments a country needs an elastic note system. The United States has not had it. Among other unfortunate results, financial panics have been more frequent and more severe in the United States than anywhere else in the world. This condition has been changed by the establishment of the federal reserve system.

**The federal reserve system.**—The federal reserve system is a centralized banking system for the whole nation, with a considerable degree of government control. The country is divided into twelve districts, with a federal reserve bank located in a certain city in each district. These central reserve cities are Boston, New York, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, St. Louis, Minneapolis, Kansas City, Dallas, and San Francisco. There are also branches located in other cities (23 in 1923). The accompanying map shows the boundaries of the districts and the location of the central reserve cities and the branch cities.

Each federal reserve bank is a corporation, and its capital stock is owned by the "member banks" in its

district. All national banks are required to be members. State banks and trust companies may be members if they choose. At first the state banks and trust companies were slow to enter the system. Later they came in more rapidly. On June 30, 1922, there were 8,271 national bank members, and 1,657 state bank and trust company members, a total membership of 9,928. About one tenth of all the state institutions in the country were members. The twelve federal reserve banks are under the control of the Federal Reserve Board, which has its office at Washington. This gives us a unified central banking system for the whole country.

**What the federal reserve banks do.** — The federal reserve banks do business almost entirely with their member banks, rather than with the public. They have many important functions. The three most important are (1) note issue, (2) centralizing the banks' reserves, and (3) rediscount.

**Notes of the federal reserve banks.** — The federal reserve banks issue "federal reserve notes," which do not have to be secured by deposit of government bonds, and which therefore have the elasticity which our national bank notes lack. They are secured, in part, by commercial paper (promissory notes and acceptances), discounted by the federal reserve banks (as we shall see on pages 268-270). These notes are the promissory notes of the United States government, though issued and managed by the federal reserve banks. It is the plan to have the national banks eventually give up the issue of notes, and the law provides that the national banks may gradually sell their United States bonds to the federal reserve banks and retire their notes. When a federal reserve bank has bought such bonds, it may itself issue notes secured by them. This new kind of note is called the

"federal reserve bank note." If the national bank notes and the federal reserve bank notes are eventually done away with, we shall then have just one kind of bank note, the federal reserve note.

**Centralized reserves.** — The law now requires every member bank to keep with the federal reserve bank of its district a deposit equal to a certain percentage of its own deposits, which is called its "lawful reserve." This is a different use of the word *reserve* from the ordinary one, meaning cash on hand. The banks must of course continue to keep on hand a *cash* reserve sufficient to meet their obligations. But the "lawful reserve" deposited with the federal reserve bank can be quickly turned into cash. The bankers regard it, therefore, as almost the same as cash, and they do not have to keep so much cash on hand as formerly. As a result the federal reserve banks are the great cash reservoirs for the whole country. The separate banks ordinarily need very little cash. If any bank suddenly needs more cash, it can draw upon the great fund in the central reservoir. In this way all the member banks are practically certain of being able to get cash when they need it, much more certain than if each bank had to depend entirely on its own cash reserve. For an illustration, imagine that each house in a village kept a tank of water for use in case of fire. The chances are that in a bad fire the water in the tank of that particular house would not be enough to do much good. But if all the houses should combine their water supplies in one big reservoir, with pipes running to each house, then in case of fire the burning house could use the whole reservoir of water if necessary.

**Rediscount.** — When a banker finds his cash reserve getting dangerously small in proportion to his deposits, he may, as we have seen, increase his rate of discount



in order to reduce the loans and deposits and to increase the reserve. The federal reserve system provides something else that he can do. He can take some of the promissory notes and acceptances that he holds among his loans and discounts and sell them to the federal reserve bank of his district. The federal reserve bank will give in exchange either a deposit credit or some of its federal reserve notes. The notes will increase the banker's cash reserves, whereas deposits in the federal reserve bank may be quickly drawn upon in the form of notes or other lawful money.

**Increases the bank's reserve ratio.** — This transaction has therefore resulted in strengthening the banker's position. Suppose our banker's statement reads as follows:

<i>Assets</i>	<i>Liabilities</i>
Loans and discounts...\$500,000	Capital stock.....\$100,000
Real estate and furniture 50,000	Surplus..... 50,000
Stocks and bonds..... 100,000	Undivided profits..... 20,000
Reserve deposited with	Deposits..... 580,000
Fed. Res. Bank..... 50,000	
Cash reserve..... 50,000	
<u>\$750,000</u>	<u>\$750,000</u>

His cash reserve is about  $8\frac{1}{2}\%$  of his deposits, and his cash reserve and reserve on deposit in the federal reserve bank together are about  $17\%$  of his deposits. If he wishes a stronger reserve, he may take promissory notes amounting, for example, to \$50,000 from his loans and discounts and sell them to the federal reserve bank. This is called *rediscount*, and the process is exactly the same as that by which the bank originally obtained the notes from its customers. *Rediscount means discounting again a note or acceptance that has already been discounted at least once.* The bank indorses the notes. The federal

reserve bank figures the interest for the time that still has to elapse before each becomes due, subtracts the interest from the face of the notes, and gives the proceeds to the banker. The federal reserve bank has its own rate of discount, for rediscounting notes, just as each bank does. Suppose the interest amounts to \$500, and that the proceeds (\$49,500) are taken, \$20,000 in federal reserve notes and the balance in deposits. The bank's statement will then read:

<i>Assets</i>	<i>Liabilities</i>
Loans and discounts...\$450,000	Capital.....\$100,000
Real estate and furniture 50,000	Surplus..... 50,000
Stocks and bonds..... 100,000	Undivided profits..... 19,500
Reserve deposited with	Deposits..... 580,000
Fed. Res. Bank..... 79,500	
Cash reserve..... 70,000	
<u>\$749,500</u>	<u>\$749,500</u>

Notice that the loans and discounts have decreased, reserve on deposit and cash reserve have increased, and that undivided profits have lost \$500 on account of the discount charged by the federal reserve bank. The cash reserve is now a little over 12%, and the cash reserve and reserve on deposit with the reserve bank are together over 25% of the bank's deposits.

**Central control of discount rates.** — By means of rediscount, member banks all over the country are constantly turning over to the federal reserve banks millions of dollars of promissory notes and acceptances discounted for their customers. The banks generally charge somewhat higher interest rates than the federal reserve banks charge for rediscounting; there is thus a profit to the banks even when they have to rediscount. The federal reserve banks, under the control of the Federal Reserve

Board at Washington, determine their discount rates from time to time. When the federal reserve rate goes up, member banks find it less profitable to rediscount; they therefore raise the discount rates which they charge their own customers. On the other hand a fall in the federal reserve rate makes rediscounting more profitable, and bankers try to increase their business by lowering their own discount rates. In this way the federal reserve banks control the commercial borrowing of the whole country, just as each bank does among its own customers, and we have all the banks of the country bound together in a single system.

**Savings banks.** — Besides the commercial banks and trust companies, there are in the United States many savings banks. Most of these banks are situated in the cities of the northeastern part of the country. There are few savings banks in the west and south. However, many of the commercial banks, both national and state, have their "savings departments," in which they do a regular savings-bank business. There are also the Postal Savings Banks, operated by the United States government through the post offices. Every citizen, therefore, has easy opportunity to place his savings where they will be kept in safety and yield him a sure income.

#### EXERCISES

1. Why are the notes of the national banks inelastic?
2. What is the difference between the federal reserve note and the federal reserve bank note?
3. What is the meaning of the term "lawful reserve"? Why is it a benefit to the country to have the lawful reserves of the banks held by the federal reserve banks?
4. Who are the owners of the federal reserve banks? Were all these owners allowed to choose whether to become owners or not?
5. It is necessary at times to restrict the amount of discounting

done by the banks. Show how the federal reserve banks can do this by raising their rediscounting rates.

6. For what two reasons may a banker in your city desire to rediscount commercial paper with the federal reserve bank?

7. Suppose the First National Bank of the town X has the following statement on July 1, 1928:

<i>Assets</i>	<i>Liabilities</i>
Loans and discounts....\$560,000	Capital.....\$150,000
Real estate and furniture 85,000	Surplus..... 80,000
Stocks and bonds..... 75,000	Undivided profits..... 12,000
Reserve deposited with	Deposits..... 513,000
Fed. Res. Bank..... 60,000	Bank notes..... 70,000
Cash reserve..... 45,000	
<u>\$825,000</u>	<u>\$825,000</u>

(a) If the bank rediscounts \$10,000 worth of commercial paper for three months at 5% with the federal reserve bank, and adds the proceeds to its deposit at the federal reserve bank, what changes will be made in the statement?

(b) If instead, the bank receives the proceeds of the rediscount in federal reserve notes, what changes would be made in the original statement?

**References for further study.** — Westerfield, R. B., *Banking Principles and Practice* (1921), Vol. II. Holdsworth, J. T., *Money and Banking* (1914), pages 127-142; 151-163; 330-402. White, H., *Money and Banking*, Fifth Edition (1914), pages 332-368; 401-452. Dewey, D. R., *Financial History of the United States*, Sixth Edition (1918), (see Table of Contents). Kemmerer, E. W., *The A. B. C. of the Federal Reserve System* (1918). Ely, R. T., *Outlines of Economics*, Third Revised Edition (1916), pages 282-316. Seager, H. R., *Introduction to Economics* (1905), pages 338-344. Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. 1, pages 371-387.

## CHAPTER XXVII

### THE MONETARY SYSTEM OF THE UNITED STATES

**The eleven kinds of money.** — Eleven kinds of money are in use in the United States: four are coin, two are representative money, and five are credit money. The following table contains a list of these eleven kinds of money and shows the amount of each in round numbers, on January 1, 1923:

#### MONETARY STOCK OF THE UNITED STATES, JANUARY 1, 1923

1. Gold coin and bullion	\$3,933,000,000	
2. Silver dollars	442,000,000	
3. Subsidiary silver	269,000,000	
4. Minor coins (estimated)	<u>102,000,000</u>	
Total coin and bullion		\$4,746,000,000
5. Gold certificates	708,000,000*	
6. Silver certificates	<u>344,000,000*</u>	
Total certificates		1,052,000,000
7. United States notes	347,000,000	
8. Treasury notes of 1890	1,000,000*	
9. National bank notes	762,000,000	
10. Federal reserve bank notes	44,000,000	
11. Federal reserve notes	<u>2,817,000,000</u>	
Total notes		<u>3,971,000,000</u>
Total monetary stock		<u><u>\$8,716,000,000</u></u>

Certain details of this table which may not be clear at first will be explained in the following description of the several kinds of money.

\* Not included in the total monetary stock, for reasons explained on pages 280-281.

(1) **Gold coin and bullion.** — The United States has a system of gold monometallism. Our standard money is gold coin. The unit is the gold dollar, which contains 25.8 grains of standard gold. Standard gold is a mixture of nine tenths pure gold and one tenth an alloy of silver and copper. The gold dollar therefore contains 23.22 grains of pure gold. We do not have a one-dollar gold coin, as it would be too small. The smallest gold coin is the "quarter eagle" (\$2.50). There is also the "half eagle" (\$5), the "eagle" (\$10), and the "double eagle" (\$20). The weight of each of these coins can be calculated easily from the weight of the dollar. All gold coins are unlimited legal tender.

**Gold bullion.** — "Gold bullion" is uncoined gold. The United States Treasury keeps on hand considerable quantities of gold bullion. It is all ready to be coined when needed, and the bullion itself serves as money for some purposes just as well as coin, or even better. It is good for reserves and for shipping from place to place, since there is less loss from abrasion than when coins are handled. Gold bullion held by the Treasury and the federal reserve banks is counted with gold coin in the enumeration of the money system.

**Location of gold coin and bullion.** — Referring to the table, notice that on January 1, 1923, there were in the monetary system of the United States \$3,933,000,000 (in round numbers) of gold coin and bullion. Of this huge sum, the United States Treasury held \$3,284,000,000. The federal reserve banks and federal reserve agents held \$220,000,000. The rest, \$429,000,000, was *in circulation*, by which we mean in people's pockets, in safes and cash drawers of stores and offices, in the banks, and, in brief, everywhere except in the Treasury and in the possession of federal reserve banks and agents.

(2) **Silver dollars.** — The United States, as stated in Chapter XXIII, had bimetallism from 1792 to 1873. The present weight and composition of the silver dollar were fixed by law in 1837. The silver dollar contains 412.5 grains of standard silver, consisting of nine tenths pure silver and one tenth an alloy of copper.

**Coinage of silver dollars.** — When our monetary system was first established, in 1792, the coinage ratio was 15 to 1, and there was coinage of silver dollars but no coinage of gold. In 1834 the ratio was changed to practically 16 to 1, after which there was gold coinage but hardly any coinage of silver dollars. In 1873 the free coinage of silver dollars was abolished. Up to this time about \$8,000,000 had been coined. During the "free silver" agitation which raged from about 1875 to the end of the nineteenth century, Congress passed two laws, the Bland-Allison act of 1878 and the Sherman act of 1890, which required the United States to purchase large amounts of silver bullion and which have led to the coinage of about 400,000,000 silver dollars. This explains why we have our present large stock of silver dollars, although we have not had any actual free coinage of silver since 1834. The last coinage of silver dollars was in 1905.

**Value of silver in the dollar.** — In 1873, when the free coinage of silver was stopped, there was a little more than a dollar's worth of silver in a silver dollar. The next year the price of silver began to fall. By the close of the nineteenth century there was less than fifty cents' worth of silver in the dollar. Since then the price of silver has risen, and for a short time, during the World War, the metal in the silver dollar was again worth more than a dollar. It was then profitable to melt down silver dollars and sell the bullion. Very soon the price fell again. In

January, 1923, the silver in the silver dollar was worth about fifty cents.

**The "limping standard."** — Although its legal title is "standard silver dollar," the silver dollar is not really standard money. It is unlimited legal tender, but it does not have the privilege of free coinage. There is not a dollar's worth of metal in the silver dollar. Its value is kept at a parity with gold by limitation of quantity and by the general understanding that the Treasury will keep it at a parity by redemption in gold if necessary. The silver dollar thus stands halfway between standard money and token money, a fact which has led people somewhat sarcastically to call our system the "limping standard." No good is accomplished by pretending that our silver dollar is standard money. In order to make our system completely monometallic, the silver dollar should be reduced to a real token coin, by making it legally redeemable in gold and making it only limited legal tender.

**Silver dollars mostly in the Treasury.** — Nearly all the stock of silver dollars is kept in the Treasury; only about 60,000,000 are in circulation. This is because the coins are so heavy that most people dislike to handle them. They prefer to have other kinds of money. However, in the western part of the country and in parts of the south, the people generally like to use the silver dollars, and it is in these parts of the country that they remain in circulation. Most of the silver dollars circulate in the form of silver certificates, as will be seen later.

(3) **Subsidiary silver coins.** — The subsidiary silver coins are the half dollar, the quarter, and the dime. They are a true example of token money, as described in Chapter XXII. They are light weight; the silver in two half dollars, four quarters, or ten dimes is about 93% of the



weight of a silver dollar. They are redeemable in standard money at the Treasury, whenever presented in multiples of twenty dollars. They are legal tender for small payments, not exceeding ten dollars. By exchange at the Treasury for standard money and *vice versa*, the amount in circulation corresponds automatically with the people's need of small change money.

(4) **Minor coins.** — The minor coins are the five-cent and one-cent pieces. The "nickel" is made of copper (75%) and nickel (25%) and weighs 77.16 grams. The cent is made of bronze (95% copper and 5% tin and zinc) and weighs 48 grams. These coins are also true examples of token money, and what is said above about the subsidiary silver coins applies equally to them, except that the nickel and cent are legal tender only for payments not exceeding twenty-five cents.

(5) **Gold certificates.** — The gold certificates are "representative money," as explained in Chapter XXII. Their purpose is to enable the people to use the standard gold money without actually handling the heavy gold coins. In California and the other Pacific coast states the people use a great deal of gold coin as pocket money and till money, but in all the rest of the country people prefer to carry the paper certificates. The Treasury is required always to have on hand in a separate fund an amount of gold coin exactly equal to the amount of gold certificates outstanding. On January 1, 1923, there were (in round numbers) \$708,000,000 of gold certificates, and exactly the same amount of gold was held in the Treasury as a special fund from which to redeem the certificates.

Gold certificates will always be redeemed by the Treasury in gold coin on the demand of the holders. The Treasury will also give gold certificates to any one

in exchange for gold coin. The gold certificates are issued in denominations of ten dollars and up, and they are full legal tender.

(6) **Silver certificates.** — The silver certificates correspond exactly with the gold certificates. They are representative money. The Treasury must always keep on hand in a special fund silver dollars of exactly the same amount as the silver certificates outstanding. This is the way in which most of the silver dollars are used, instead of being carried about as pocket money. The silver certificates will be exchanged for silver dollars, and *vice versa*, by the Treasury on demand. They come in denominations of one dollar, two dollars, five dollars, and up. They are not legal tender.

(7) **United States notes.** — We come now to five kinds of credit money. The United States notes, or "greenbacks" as they are commonly called, are the promissory notes of the United States government. They were first issued at the time of the Civil War, to assist the government in financing that great struggle.

**Redemption.** — Nothing was said at the time as to when the government would make good its promise and pay the notes, though it was generally understood that it would be soon after the close of the war. However, this was not done, and the greenbacks remained unpaid and continued to circulate as money for thirteen years after the war. All this time they were "below par," that is, not worth their face value in gold. Finally, on January 1, 1879, the government offered to repay them in gold, and since then it has given gold to any one who asks it in exchange for greenbacks. A law passed just the year before, however, forbade the Treasury to cancel the notes when paid and required that redeemed notes be reissued. This law prevented the debt ever being

paid off and fixed the amount of greenbacks (in round numbers) at \$347,000,000 dollars, where it has remained ever since. The greenbacks may always be redeemed in gold on demand, but the amount outstanding can never change. In order to be able to pay the greenbacks on demand, the Treasury keeps a "reserve" of \$150,000,000 in gold coin. If this reserve should ever fall below \$100,000,000, the government must borrow gold by an issue of bonds. The redemption of the greenbacks has at certain times caused the United States government a great deal of trouble. On one occasion (in 1895) there was a "run" on the Treasury, which very nearly caused its failure.

**Legal tender quality.** — The United States notes are full legal tender except for (1) payment of duties on imports (tariff duties) and (2) payment by the government of interest on the public debt. Statement to this effect may be found engraved on any greenback. This curious arrangement was the result of conditions during the Civil War. The United States was then borrowing all the money it could through issue of its bonds, upon which it promised to pay interest in gold. When the greenbacks were issued, it was clear that, if the government could use them to pay the interest on its bonds, people would not be so willing to lend to it. The government therefore agreed to continue to pay gold; hence this exception to the legal tender character of the greenbacks. But if the greenbacks were made legal tender for all payments to the government, where would it get the gold to pay its interest? To meet this difficulty, the other exception to the legal tender character of the greenbacks was made, which gave the government one source of gold revenue. Since 1879, when redemption of the greenbacks began, the government has not insisted on this provision, and

tariff duties may now be paid in greenbacks as well as in other kinds of money. The United States notes are issued in denominations of one dollar, two dollars, five dollars, and up.

**Verdict on the greenbacks.** — The whole history of the United States notes is most interesting, but it is too long a story for this book. They have not been a good kind of money. Government notes never have been. It would have been better for the country if they had been paid and canceled right after the Civil War. The best thing to do with them now would be to pay them off and get rid of them. It does not appear likely, however, that this will be done in the near future.

(8) **Treasury notes of 1890.** — The treasury notes of 1890 are another form of promissory note of the United States government. They were issued to purchase silver under the Sherman act of 1890. Later they were called in and replaced by silver certificates. The odd million dollars still remaining in circulation consist of notes that have not been returned to the Treasury. Many of them have doubtless been lost or destroyed or are being kept by collectors. They are no longer a real part of our monetary system.

(9) **National bank notes.** — The national bank notes are the promissory notes of the national banks secured by government bonds. They have been fully described in the preceding chapter. Each bank has to pay its own notes on demand, and the United States government also has to pay any national bank note presented to it. The notes are not legal tender except in payment to a national bank or to the United States government. The smallest denomination is now five dollars. As stated in the preceding chapter, they are inelastic and may eventually be dropped from our monetary system.

(10) **Federal reserve bank notes.** — The federal reserve bank notes are the promissory notes of the federal reserve banks, secured by deposit of the government bonds bought from the national banks. They are in practically all respects exactly like the national bank notes, except that they are mostly in small denominations, ones, twos, and fives. The amount so far issued is not great, and it is likely that these notes are only a temporary part of our monetary system.

(11) **Federal reserve notes.** — The federal reserve notes are the promissory notes of the United States government, issued by the federal reserve banks, as described in the preceding chapter. They are payable in gold on demand at the United States Treasury, and are payable in gold or lawful money at any federal reserve bank. They are secured, not by government bonds deposited, but by the commercial paper, gold coin, and other assets held by the federal reserve banks. A large gold reserve is always held back of them by the federal reserve banks. They are not legal tender, except in payment to the government, the federal reserve banks, and member banks of the federal reserve system. The smallest denomination is five dollars. These notes are elastic and are the real and permanent bank note currency of the United States. A large amount, nearly three billion dollars, has been issued. They are the largest single item, except gold coin and bullion, in the whole monetary system, and the largest item in circulation.

**The complete monetary system.** — We now have a clear idea of the monetary system of the United States. The total monetary stock is nearly nine billion dollars. In obtaining this total (see the table on page 272), the gold and silver certificates and the Treasury notes of 1890 are not included, since these merely represent an equal

amount of gold and silver coin held in the Treasury. It would not be correct to count the coin and also the certificates. The monetary stock is about equally divided between metallic (coin and bullion) and paper money. The amount of money in circulation is not quite five billion dollars (\$4,733,000,000 on January 1, 1923). Almost exactly half is in the form of federal reserve notes. About a sixth is coin. About an eighth consists of certificates, which are found more convenient than the coins back of them. The rest is made up of other kinds of notes (government notes and bank notes). As we have seen, our monetary system would be improved by making the silver dollar a token coin and getting rid of all the credit money (notes) except the federal reserve notes.

#### EXERCISES

1. Make a list of the different kinds of paper money in our country. Show in each case that the paper money is a liability of some public or private institution.
2. What kinds of money are legal tender in the United States?
3. Why is the statement made that the silver dollar "is not really standard money"? What is standard money? How many kinds are there in the United States?
4. What is the difference between representative and credit money? Name the different kinds of money in each class.
5. What determines the amount of silver dollars in circulation?
6. What determines the amount of silver dollars and silver certificates together in circulation?
7. Why is most of the gold money and bullion not in circulation in our country?

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## CHAPTER XXVIII

### MONEY AND PRICES

**Further questions about price.** — In Part III of this book the laws of demand and supply were studied, in order to see how the prices and values of things come to be what they are. Prices are expressed in money. But how about the value of money itself? The prices of all kinds of wealth and services, as we have seen, rise and fall on account of changes in demand and supply. Does the money, in which these prices are expressed, remain constant, or is it also subject to changes in value? And if so, how does this affect prices and the cost of living? These are interesting and important questions.

**The value of money is not measured in money.** — First of all we must notice that the price of money is unlike all other prices, in that it is not expressed in money. It would be foolish to ask the price of a dollar in terms of money. Of course a dollar is always worth a dollar. Money measures the values of all other things. It cannot measure its own value.

**The value of money is measured in purchasing power.** — What, then, is meant by the value of money? It means the quantity of other things in general which will be given in exchange for money. Money is cheap when it will buy little; money is dear when it will buy much. The price of money is the quantity of other things which a dollar will purchase; in other words the "purchasing power" of the dollar.

**Can the value of money change?** — If we alter the

wording and ask, "Can the purchasing power of money change?" everybody will recognize that it can. Most people remember the bitter complaints about the "high cost of living" in 1919 and 1920. All prices were soaring. Persons whose incomes had not increased found it impossible to live in their accustomed comfort. The purchasing power of their money had declined. The dollar was not worth what it had been. Then came a general drop in prices, and in 1921 everybody was noticing the decline in the cost of living. The purchasing power of money was going up. The dollar was gaining in value.

**The value of money affects all prices.** — It is important to notice that a change in the value of money causes a change in *all* prices. Heretofore we have been studying the prices of particular things. The price of coal is the result of the demand and supply of coal. A change in the demand for coal will change the price of coal. This will not have any appreciable effect on the price of sugar or any other price. But a change in the value of money affects all prices. If we see a rise in the price of some particular commodity, such as coal, while other prices remain unchanged, we seek the cause in either an increased demand or a decreased supply of coal. But if we find the prices of all commodities (or practically all) going up together, we can be pretty sure that the cause is a decline in the value of money.

**Value of money and the general price level.** — The average of all prices is called *the general price level*. This is about the same thing as "the cost of living." A rise in the general price level means a fall in the purchasing power of money or the value of money. A fall in the general price level means a rise in the value of money. We see, then, that the value of money can and does change, and that when it changes it causes an opposite



change in the general price level. We must now learn what determines the value of money.

The service performed by money is the making of exchanges. The amount of this work to be done depends on the total value of commodities and services exchanged; i.e., the quantity of goods, or the *volume of trade*, multiplied by the average price, or the *general price level*. This work is done by money and commercial bank deposits, i.e., by *currency*. Since money and bank deposits are used over and over for many transactions, the quantity of currency needed is, of course, much less than the total value of goods exchanged in any given time. It has been estimated that on the average money changes hands in the United States about 20 times a year; and bank deposits, about 50 times. These numbers are called the *velocity of circulation* of money and bank deposits respectively. The two important factors which determine the general price level and the value of money are (1) the quantity of currency and (2) the amount of business, or the volume of trade.

**Increase in the quantity of currency.**— Suppose something should happen to increase greatly the quantity of money or deposits. Other things being equal, the value of currency would decline. There being more currency to perform the same amount of exchanges, the value of each unit of currency would decline, and the price level would rise.

**Historical examples.**— This has actually happened over and over again. When the greenbacks were issued at the time of the Civil War, they added something like 400 million dollars to the money in circulation. The result was a great increase in prices. Histories of the United States will tell you how very high prices were during the Civil War and for several years after. The

chief cause was the issue of greenbacks. Again, beginning about the end of the nineteenth century, there has been a great increase in the production of the gold mines of the world. Much of this gold was coined into money and so increased the quantity of money in circulation. The result was a steady increase in prices. In the eighteen years from 1896 to the beginning of the World War in 1914, the price level in the United States just about doubled. During the World War (1914-1918), almost every nation in the world made a tremendous increase in its currency through issuing bank notes and other kinds of paper money and increasing bank deposits. This "inflation," or increase in the amount of currency, was an important cause of the very high prices, the "high cost of living," during the war and for some years after. Thus it is evident that an increase in money or deposits tends to raise prices. This is just what we should expect. An increase in the quantity of anything tends to lower its price. If we have a bumper wheat crop, the price of wheat tends to be lower. So if we have a "bumper crop of dollars," the value of a dollar goes down, and the prices of all other things, measured in dollars, go up.

**Decrease in quantity of currency.** — In the same way, a decrease in the quantity of money or of deposits tends to cause a fall in prices. A reduction in the number of dollars makes each dollar worth more, and so fewer dollars will be given in exchange for other things; that is, prices of all other things, measured in dollars, will fall. Generally in the history of the world, money has increased rather than decreased, and it is not so easy to find historical examples of a reduction in the amount of money. But every year or so business men experience the effect of a reduction in bank deposits. Any business man will

tell you that when the banks "tighten up" on loans, thus reducing the amount of deposits, currency becomes scarce and prices fall.

**Law of quantity of currency and price level.** — So we have the important economic law that *a change in the quantity of currency (money or commercial bank deposits) tends to cause a similar change in the general price level.* An increase in currency tends to raise prices; a decrease in currency tends to lower prices.

**Increase in trade.** — The other important factor in determining the value of money and the general price level is the volume of trade. If there is a great increase in the amount of business to be done, there is an increased need of currency. If there is no corresponding increase in the quantity of currency, each dollar will be worth more than before. Hence fewer dollars will be given in exchange for other things; that is, prices will fall. The value of money will rise and the price level will fall.

**Historical example.** — This has happened frequently in the world's history. For example, the greenback inflation of the Civil War came to an end in 1865. After that, for about fifteen years, there was no great increase in the quantity of money. But the country was growing, and business was expanding rapidly. The result was a steady fall in prices, till in 1879 the general price level was barely half as high as in 1865.

**Decrease in trade.** — A decrease in the volume of trade will cause the opposite effect; that is, a rise in the general price level. There is less need for currency; dollars are in less demand and therefore worth less. And other things, measured in terms of dollars, are worth more; hence prices are higher. In other words, a small volume of trade is the same thing as a scarcity of goods for sale. If money is as abundant as ever, while goods

are scarce, we naturally expect to find the prices of goods high.

**Prices after the war.** — This was illustrated by the high price level after the great World War. The war caused great destruction of wealth, and the political and social disturbance after the war caused a serious check to the production of wealth over nearly all parts of the world. The result was scarcity of goods, reduced volume of trade, and so a tendency to high prices. We have seen that there was at the same time a great increase in currency, which also tends to raise prices. The coincidence of two causes, increased currency and scarcity of goods, resulted in an extraordinary increase in prices; the general price level about doubled from 1914 to 1919.

**Changes in currency and trade together.** — The world's stock of currency has been increasing almost continuously as far back as our records go. Discovery of new gold mines and invention of improved processes of extracting the gold have enlarged the world's stock of gold coin. Increased knowledge of banking and modern methods of business in general have greatly extended the use of deposits as a medium of exchange. Hence we have had a continual tendency to higher prices. On the other hand, the growth in wealth and population and business activity has increased the volume of trade and so tended to lower prices. These two great tendencies, the increase in currency and the increase in trade, have thus worked against each other. If our currency increased in exactly the same proportion as our trade, the two would counteract each other, and the price level would remain fairly constant. In fact, the growth of currency has been too fast for the growth of trade. The resulting increase in prices has been particularly rapid since the close of the nineteenth century.

**Index numbers.** — Of course prices do not all move in the same way. Some rise while others fall, and the increases and decreases vary. For example, the average wholesale prices of bituminous coal, wheat, and copper in the three years 1913, 1914, and 1915 were as follows:

	1913	1914	1915
Bituminous coal....	\$1.27 per ton	\$1.17 per ton	\$1.04 per ton
Wheat .....	.91 per bu.	1.04 per bu.	1.34 per bu.
Copper.....	.15 per lb.	.13 per lb.	.17 per lb.

To measure these price movements, we may call one year, say 1913, the base year and express each price of each commodity as a percentage of the 1913 price of that commodity. For example, the prices of coal were \$1.27 in 1913, \$1.17 in 1914, and \$1.04 in 1915. Calculating the

percentages, we have  $\frac{1.27}{1.27} = 1$ , or 100%,  $\frac{1.17}{1.27} = .92$ ,

or 92%, and  $\frac{1.04}{1.27} = .82$ , or 82%. If, then, we let 100

stand for the 1913 price of coal, the 1914 price, relatively to it, will be represented by 92 and the 1915 price by 82. Such numbers are called *price relatives*. Calculating them for all the above commodities gives the following result:

<i>Price Relatives</i>			
	1913	1914	1915
Bituminous coal.....	100	92	82
Wheat.....	100	114	147
Copper.....	100	87	113

We might add to this table the price relatives of all the other important commodities and so obtain a record of the price changes of each separate commodity. But suppose we wish to know how prices *in general* changed. For this we must have for each year some number,—called an *index number*,—to express the general or average price

relative; in other words, an average of the price relatives. *An index number of prices is a number which expresses the general price level for any given year relatively to the general price level of some year which is taken as the base year, and whose price level is represented by 100.*

**Simple arithmetical average.** — There are many kinds of averages and a great variety of index numbers. For example, we might take the simple arithmetical average of the price relatives of each year. The average for 1913 is of course 100, since each item is 100. For 1914 it is 98; that is,  $\frac{92 + 114 + 87}{3}$ . For 1915 it is 114. Index num-

bers have been constructed in this way, but they have one serious defect. The commodities which people buy and sell are not all of equal importance. An index number which gives the same weight to wheat and to putty is not very accurate. Yet this is just what the simple average does.

**Weighting.** — To avoid this defect it is necessary to use a *weighted* average which takes proper account of the relative importance of the several commodities. For example, if in a given year the price of sugar increased 4 per cent and the price of cotton increased 10 per cent, the simple average increase was  $\frac{4 + 10}{2}$ , or 7, per cent. Now

if sugar were twice as important as cotton, we could calculate the average by putting sugar in twice; that is,  $\frac{4 + 4 + 10}{3} = 6$ . This is a weighted average of the

percentage increases. The most satisfactory method is to weight the price movement of each commodity according to the value of that commodity exchanged in a given year. The simplest way to accomplish this is to calculate the total value of goods exchanged in a given year and then to compare with this the value of exactly the same quantities

of goods reckoned at the prices of each of the other years. To see how this is done, let us return to our example of coal, wheat, and copper. Here are the facts for the first year:

	<i>Price in 1913</i>	<i>Quantity exchanged in 1913</i>	<i>Value at 1913 prices</i>
Bituminous coal.	\$1.27	447 million tons	568 million dollars
Wheat.....	.91	555 " bu.	505 "
Copper.....	.15	812 " lbs.	122 "
Total value .....			1,195 "

To buy these quantities of these commodities in 1913 cost 1,195 million dollars. If the same quantities of these commodities cost more or less than this in 1914, it must have been on account of changes in prices, and if we knew what the cost was in 1914, we should have a very good measure of the average price movement. This is easily calculated, as follows:

	<i>Price in 1914</i>	<i>Quantity exchanged in 1913</i>	<i>Value at 1914 prices</i>
Bituminous coal..	\$1.17	447 million tons	523 million dollars
Wheat.....	1.04	555 " bu.	577 "
Copper.....	.13	812 " lbs.	106 "
Total value .....			1,206 "

It is clear that the value in 1914 of these commodities was 1,206 million dollars, whereas the same commodities were worth 1,195 million dollars in 1913. Prices on the average evidently rose slightly from 1913 to 1914.

By a similar calculation we find that the total value at 1915 prices was 1,347 million dollars.

All that is now required for a real series of index numbers of the prices of these three commodities is to express the total value for each year as a percentage of the value in 1913, thus:  $1,195 \div 1,195 = 1$ , or 100%;  $1,206 \div 1,195 = 1.01$ , or 101%;  $1,347 \div 1,195 = 1.13$ , or 113%. The series is:

*Year Index number of prices*

1913 100

1914 101

1915 113

**Practical index numbers.**—Our example was intentionally made simple by using only three commodities. In the construction of practical index numbers, the method we have studied is applied to a large number of commodities and is extended to any number of years. The result is a series of index numbers which shows clearly and accurately the average or general price movement from year to year.

One of the most useful series of index numbers of prices is published by the United States Bureau of Labor Statistics. This shows the index number of wholesale prices for each year from 1890 to the present time. The number of commodities varies from 192 in 1890 to 404 in 1922. The base year (in which the index number is 100) is 1913. The prices are weighted according to the values exchanged in 1919, using quantities reported by the Census. The series to 1922 is as follows:

## WHOLESALE PRICES IN THE UNITED STATES (1890-1922)

<i>Year</i>	<i>Index Number</i>	<i>Year</i>	<i>Index Number</i>	<i>Year</i>	<i>Index Number</i>
1890	81	1901	79	1912	99
1891	80	1902	84	1913	100
1892	75	1903	86	1914	98
1893	77	1904	86	1915	101
1894	69	1905	86	1916	127
1895	70	1906	89	1917	177
1896	67	1907	94	1918	194
1897	67	1908	90	1919	206
1898	70	1909	97	1920	226
1899	75	1910	101	1921	147
1900	81	1911	93	1922	149



The clearest way to present index numbers is by means of a graph or curve. Thus, the annual index numbers from 1890 to 1922 are shown in Figure 21.

These figures give a clear idea of the changes in prices since 1890. They show the gradual fall in prices to 1896,

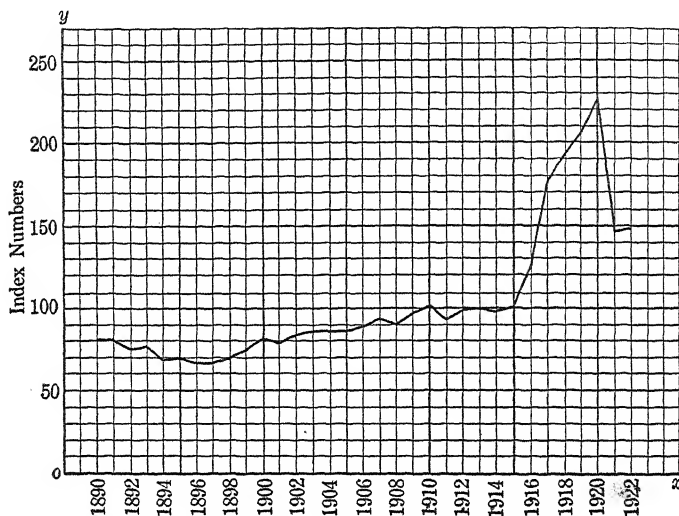


FIG. 21. INDEX NUMBERS OF WHOLESALE PRICES IN THE UNITED STATES, 1890-1922

and the almost unbroken rise from 1897 to 1920, including the extraordinary leap of prices during the years 1916 to 1920, during and immediately after the World War. Prices in 1920 were more than three times as high as they were in the last ten years of the nineteenth century. A very sharp decline is seen in 1921.

**Effects of fluctuating standard.** — Large and sudden changes in the general price level (i.e. the purchasing power of money) are undesirable. Such changes affect

different people unequally, helping some and injuring others. For example, those who have debts to pay are helped by a rise in prices. To get the necessary number of dollars to pay their debts they do not have to furnish so many goods or services as would otherwise have been required. Suppose a farmer borrowed \$1,000 at a time when wheat was worth one dollar a bushel. If, by the time he has to pay his debt, prices have risen so that wheat is worth two dollars, he need sell only 500 bushels to pay the debt. If the price of wheat had remained stationary, it would have taken 1,000 bushels. On the other hand, creditors lose when prices rise. They are paid in dollars which will buy less than at the time the loans were made; in other words, they are paid in dollars of less purchasing power. In like manner, a general fall in prices is beneficial to creditors and an injury to debtors.

Those whose incomes are in the form of salaries and wages are affected the same as creditors by price changes. They have agreed to work for a certain number of dollars. If, when they get their pay, their dollars have a reduced purchasing power on account of a general rise in prices they suffer loss. On the other hand they gain when prices go down. This advantage or disadvantage continues till new wage agreements are made. Other persons similarly affected are those whose incomes are based upon long-standing agreements, such as rents, interest on loans, and annuities. These persons receive from time to time a certain number of dollars. Their welfare depends greatly on whether the purchasing power of their dollars is large or small.

Fluctuations in the value of money thus cause injustice and inequality between different classes of the people. The best monetary standard is that which fluctuates as

little as possible. Gold has been adopted as the world's monetary standard because on the whole its value appears to fluctuate less than that of any other available material. But the gold standard is by no means perfect in this respect.

**The stabilized dollar.** — Some economists have sought a remedy for the fluctuating purchasing power of money in the adoption of a standard based upon the index number of prices. This is generally known as the "multiple standard." The plan which has received most attention in recent years is known as the "stabilized dollar." Briefly, this plan would make the dollar, not a certain weight of gold (25.8 grains as now), but a variable weight. Gold coin would not be used in circulation. Indeed very little is now so used. The gold would be held by the government. Gold certificates and other forms of money in circulation would be redeemed by the government in gold dollars. The amount of gold in the dollar, however, would be determined from time to time by a government commission, being fixed in relation to the index number so that a gold dollar would always purchase about the same quantity of goods; i.e., would always have the same purchasing power. This plan has obviously some great advantages. It involves also certain serious practical difficulties, which have thus far prevented its adoption.

#### EXERCISES

1. Why is it better to use a weighted average than a simple average when making an index number?
2. Name four things that would tend to increase the velocity of circulation of money. What effect would this increase in velocity have on the level of prices?
3. During the World War the United States received large amounts of gold money from foreign nations. Supposing that the

volume of trade remained constant during these years, what effect would this increase in the gold supply have had upon the level of prices?

4. When bank deposits increase very rapidly what is likely to be the effect upon the level of prices?

5. There is much complaint against the "high cost of living." If the government were to attempt to reduce the cost of living, what things might it do?

6. In 1896 there was a strong political demand in the United States for the restoration of bimetallism at the ratio of 16 to 1. What classes of the people would you expect to find favoring this? What classes would you expect to find in opposition? Explain. Verify your explanation by looking up the facts, if you can.

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## PART V. TRADE AND TRANSPORTATION

### CHAPTER XXIX

#### THE ECONOMICS OF TRADE

**Division of labor depends on trade.** — The division of labor, as we have seen in Chapter X, is of very great importance in the production of wealth. But division of labor would be impossible without trade. Trade makes it possible for each person to devote his energies to that line of production at which he is skillful or which he finds most agreeable, trusting to his ability to buy from others the things necessary to supply the great bulk of his wants. In particular, trade makes possible territorial and international division of labor, and it is this kind of trade, involving the exchange of goods between different places, that requires our special study.

**Why is there trade between different regions?** — Why is there trade between different parts of the country and between different countries? It occurs to us at once that this is the only way we could get certain kinds of wealth. For example, the jewelers of the United States buy their diamonds from producers in other countries, particularly South Africa, for the simple reason that no diamonds are produced in this country. The inhabitants of the city of New York get the vegetables they eat through trade with other places, near and far, because it would not be possible to raise any such amount of vegetables in the city.

**Differences in cost.** — But this will not explain all

trade. The people of New England buy most of their wheat and beef from distant states in the west, though it is possible to raise wheat and cattle in New England. The farmers in the southern states buy most of their farm machinery in the north, though it is possible to make such machinery in the south. Why all this buying and selling? The answer is that people buy goods where they are cheapest, and goods are cheapest where their cost of production is lowest. We could produce all the sugar we use right here in the United States. We do produce some. But we buy most of our sugar from Cuba, Porto Rico, and other countries, because we can get it there at a lower price. The cotton farmers of the south buy their machinery from the north, the New England manufacturers buy their cotton from the south, and so on, because in each case that is where that particular kind of wealth can be produced most cheaply.

**Causes of differences in production costs.** — Production costs of any particular article are different in different places for a variety of reasons, such as proximity of certain materials, quality of soil and climate, character of the laboring population, skill and experience of the business men who manage industry, and accumulation of capital. Wheat is raised at low cost in the Mississippi valley, because the soil and climate are favorable. It would be very costly to raise our own supply of coffee or cocoa in the United States; expensive hothouses and other devices would be required to counteract an unfavorable climate. Lumber is produced more cheaply in certain states than in others, because there is where the forests are. Shoes are made cheaply in certain towns of New England because long years of experience have developed skillful laborers and able managers in this particular line. The great steel mills of the middle states

manufacture cheaply because of the favorable location of materials and the skill and energy of those who have built up the industry. Innumerable other examples could be named.

**The gain from trade.**—Through trade, and the territorial division of labor which it makes possible, the people of each town, state, or nation are enabled to engage in the production of those things for which their locality is especially adapted. Other things they obtain from other places, where they can be produced more cheaply than at home. As a result, production is enormously increased, and each community has a vastly greater amount and variety of wealth to enjoy than if everything had to be produced within its own borders.

**An illustration.**—Let us see how the gain comes, by studying a simple example. Suppose there were no trade between New England and the western states. The people of New England, with a certain expenditure of land, labor, and capital, can make a pair of shoes. Let us suppose that it takes the same expenditure of land, labor, and capital to raise a bushel of wheat in New England. The cost of a bushel of wheat and a pair of shoes would be the same. Now suppose the New Englanders get the opportunity to buy wheat from the west at the rate of five bushels of wheat for one pair of shoes. By shifting land, labor, and capital from wheat growing to shoe manufacturing, they can produce a pair of shoes in place of each bushel of wheat, and for each such pair of shoes they can get in trade five bushels of wheat. They now get five bushels where they used to get one. The difference represents the gain from trade. Of course the people of the west gain in the same way by being able to get shoes, which they can make only at great cost, in exchange for wheat, which they raise at low cost.

**All communities gain.** — Thus each community finds naturally the commodities and services which it can produce most advantageously, i.e., at the lowest cost. It devotes its main energies to producing these goods. It uses itself only a part of the product and exchanges the rest for other goods produced more cheaply in other places. It thus has a far greater quantity of goods to enjoy than would have been possible if it had had to produce everything for itself. In addition it is enabled to enjoy many things which it never could have produced at all. All communities of the world are the gainers from trade and division of labor.

**Magnitude of the world's trade.** — The trade of the world, domestic and foreign, is a gigantic enterprise. Producers all over the world are selling their products to people in other places. Thousands of merchants, wholesale and retail, brokers, jobbers, commission men, are engaged in buying and selling goods. By railroads, canals, automobiles, horses and wagons, and the ships that ply the lakes and rivers and dot the seas, innumerable kinds of merchandise are being transported from place to place at the dictate of trade.

**Practical illustration.** — The magnitude and the results of trade can be seen by studying the production and consumption of almost any important commodity. Suppose we should ask, where is wheat flour made in the United States, and what becomes of the flour made here? The answer is shown in the charts on the following page (Figure 22). It appears that of all the wheat flour made in the United States more than one fifth ( $21\frac{1}{2}\%$ ) is produced in the state of Minnesota. Kansas comes next with twelve per cent, and so on through the list of the fourteen most important flour-producing states. A glance at the other chart will show that the mills in



these states are not making flour simply to feed their own people. Fifteen per cent of the American flour is sent to foreign countries. More flour is consumed in

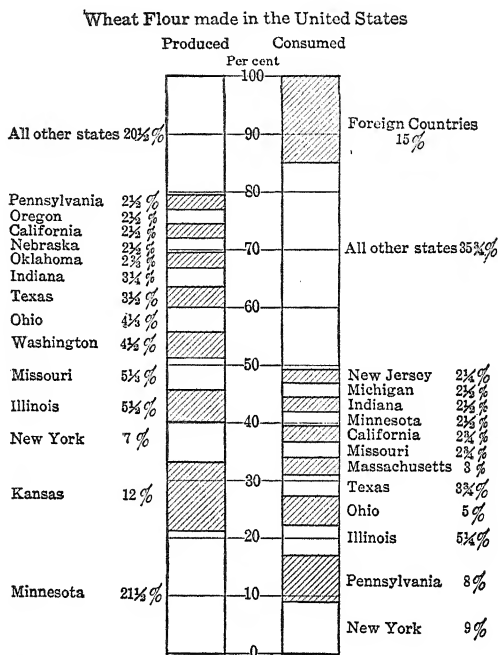


FIG. 22. PRODUCTION AND CONSUMPTION OF WHEAT FLOUR IN THE UNITED STATES

New York than in any other state. Pennsylvania takes eight per cent of all the flour but herself produces only two and a half per cent. On the other hand, notice that the state of Minnesota, though producing  $21\frac{1}{4}$  per cent, requires for her own needs only  $2\frac{1}{4}$  per cent. In other words, the people of Minnesota make nearly ten times as much flour as they need for their own use. This

condition is made possible by division of labor and trade between the states, and it enables the people of the United States to get their flour at the lowest possible cost. Of course there is also division of labor and trade in flour between the several towns within each state.

The charts in Figure 23 furnish a similar illustration of international trade. Cotton is one of the most impor-

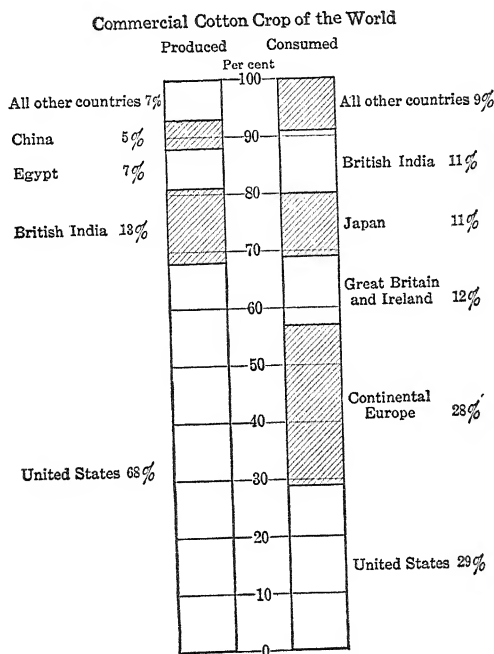


FIG. 23. PRODUCTION AND CONSUMPTION OF COTTON

tant of the world's products on account of its use in making clothing. The United States leads the world in cotton production, raising 68 per cent of the total crop.

British India comes next; then Egypt and China. These four countries produce 93 per cent of the world's cotton. The other chart shows where the cotton is used. The United States again heads the list, though it is evident that we ourselves use less than half of our own cotton crop. But Continental Europe and Great Britain and Ireland use 40 per cent of the cotton (28% and 12% respectively), though they produce none at all. Japan also is a great consumer of cotton grown in other countries. Were it not for this gigantic development of international division of labor and international trade, cotton cloth would be an expensive luxury in most parts of the world and a great part of the cotton plantations of America would have to be abandoned or put to other uses.

**What controls trade?** — The two levers that control all the complex movement of goods from place to place in foreign and domestic trade are (1) *price* and (2) *cost of transportation*.

(1) **Price.** — Everybody who has anything to sell naturally tries to sell where he can get the highest price. Every buyer tries to buy where prices are lowest. Merchants are always trying to buy things where they are cheap and sell them where they are dear.

Suppose all wealth could be moved at will, instantaneously and without cost of transportation. Each particular kind of wealth would be taken from the place where its price was low and moved to the place where its price was high. This movement in turn would have an effect on price. As goods left the low-priced place the supply of such goods in that place would become less, and, as we have learned, this would cause an increase in price. In like manner, bringing the same goods to the other place would increase the supply and so lower

the price in this other place. As the goods continued to be moved, this double change in prices would go on till at length prices would be the same in the two places. Up to this point, it was profitable to move the goods. Now it would no longer be profitable, and the movement would cease. In the same way, wealth of all sorts would move from places where prices were low to places where they were high, till finally the price of each particular article would be the same everywhere in the world.

(2) **Cost of transportation.** — In the preceding paragraph we saw what would happen if all wealth could be moved instantaneously and *without cost of transportation*. Of course this is not the real situation. It takes time to move wealth, and the transportation costs something. How will this affect our problem? The answer is quite simple. Suppose the price of wheat in Chicago is \$1.15 a bushel, and in New York, \$1.55. Suppose the entire cost of transporting wheat from Chicago to New York is 25 cents a bushel. What would happen? Clearly, there would be a profit in buying wheat in Chicago, paying to transport it to New York, and selling it there. This is what the merchants would do. The result would be a rise in the price in Chicago and a fall in New York. This would go on, not till the prices were the same in the two cities, but till the price in New York was just 25 cents higher than in Chicago, let us say \$1.20 in Chicago and \$1.45 in New York. Then there would no longer be any profit in transporting wheat, and the movement would cease.

**The law of local prices and transportation costs.** — This illustration makes clear the economic law: *The difference between the prices of any article of wealth in two places cannot be greater than the cost of transporting the article between the two places.* (It is assumed, of course,

that there is a demand for the article in both places and that its transportation is possible.) This is what is meant by saying that price and cost of transportation are the two levers that control the movement of wealth. Any change in price affects trade. Suppose something causes the price of wheat to increase in London. Immediately wheat begins to move toward London, from Chicago and Omaha, from Canada, from South America. A fall of price in London will check the movement or, if great enough, would even start it the other way.

**Results of changes in transportation cost.** — Also any change in transportation cost affects trade. When the railroads were built in the United States through to the Mississippi valley, the effect on the transportation of wheat, corn, and other grain seemed almost miraculous. Before that, no matter how cheap grain might be in the western states, none was shipped to New England. Transportation by means of wagons, or by the long roundabout water route by way of New Orleans, was so slow and costly that it was impossible to ship grain to New England at a profit. New Englanders had to raise their own grain. The price was very high, in spite of the low price in the west. The railroads quickly changed this. The cost of transporting grain became so low that grain from the west poured into New England. The price in New England fell. The price in the west plus the cost of transportation fixed the price in New England. Before long this price was actually lower than the cost of raising grain in New England. Nearly all the New England farmers stopped raising grain, turned their energies to other things, and ever since have depended on the west for the chief part of their grain. Thus, the building of the railroads opened up an entirely new opportunity for territorial division of labor.

The building of our railroads and the development of ocean shipping did the same thing to the price of grain in England. To-day the people of England obtain much of their grain, meat, and many other important food supplies from America. They thus get food more cheaply than when they had to raise it for themselves, and they are enabled to turn their energies to manufacturing and other industries which are far more profitable to them than farming ever was or could be.

Trade and transportation are "productive." — Many people fail to appreciate the economic importance of the service of trade and transportation. Farmers often point to the difference between the price paid by the consumer for a pound of beef or a bushel of potatoes and what they themselves received for raising them. Often they complain because the railroads, the merchants, the "middlemen" got so much while they, the "producers," received so small a share. Now it may, of course, be possible that the division was not a fair one. But the mere fact that a large part of the retail price went to pay costs of trade and transportation is not proof that the farmers did not get their fair share. It is quite possible that the costs of trade and transportation may be larger than the cost of raising the product on the farm. Even so the farmer is getting a better price for his product than he would if trade and transportation had not opened up for him the distant market.

It is also a mistake to assume that the farmer or the manufacturer is the only "producer"; that the others are more or less parasites. In fact the services of the railroad, the merchants, even the despised "middlemen," are just as much a part of production as the work of the farmers or manufacturers. (See Chapter VII, p. 53.) Everybody is a producer who contributes to moving

wealth to the place where it will be useful and to the persons who will use it.

### EXERCISES

1. How many things which you commonly use would you still be able to obtain if your community were compelled to become self-supporting?

2. On a map of the United States, indicate the territorial division of labor which has taken place in our country.

3. Show the important results of international trade from what you can learn about the production and consumption of (1) sugar, (2) rubber, (3) automobiles, (4) woolen cloth, (5) gold, (6) silk, (7) bananas, (8) furs.

4. Make a list of the countries of the world which we think of as producers of particular commodities. Are there any countries with modern civilization which do not appear in the list?

5. The British Isles produce enough foodstuffs to support about a third of their population. Are the people of Great Britain better off for this reason or worse off? Give a reason for your answer.

6. The automobile industry was first located in the New England states. What has caused this industry to move to the middle west?

7. A little over a hundred years ago most communities in the United States were self-supporting. What developments have occurred during the past hundred years to change this situation?

8. Suppose some new invention should give us a method of transportation very much cheaper than the railroads or any other method now in use. Would this invention increase or decrease territorial division of labor? Explain.

References for further study. — Carver, T. N., *Principles of National Economy* (1921), pages 303-323.

## CHAPTER XXX

### INTERNATIONAL TRADE

What is said in the preceding chapter about the economics of trade applies equally to domestic and foreign trade. But there are certain important problems and some serious popular misunderstandings connected with international trade, which make its special study necessary.

**Definition of international trade.** — *International trade means ordinarily trade between persons who are residents of different countries, not trade between the governments.* When it is said, for example, that "Great Britain buys cotton of the United States," we must be careful not to fall into the notion that the British government or the government of the United States has anything to do with the transaction. Such a statement means merely that British residents are buying cotton from residents of the United States. Governments do sometimes engage in international trade, but such dealings are exceptions.

**Exports and imports.** — *A country's exports are the articles of wealth (i.e. commodities or merchandise) sent out of the country to other lands in trade.* In like manner, *imports are the articles of wealth brought into the country from other lands in trade.* Exports and imports make up the bulk of a country's foreign trade.

**Services in international trade.** — But foreign trade is concerned also with certain *services*, as well as *commodities*. For example, British citizens are great ship-owners, and they perform an important service for



Americans by way of carrying goods on the ocean. This service is just as important and must be paid for as much as if it were an import of merchandise. Again, British capitalists have lent capital to American borrowers, who must pay interest every year. This service is similar to an import of merchandise. Still another example. American citizens often travel abroad. They live, say, in French hotels, travel on French railroads, and receive other services from French citizens. Such services mean a payment due to foreigners, just as when merchandise is imported. We see that all services performed for a country's citizens by foreigners, for which payment must be made, enter into the country's international trade the same as imports. Likewise, all services performed by the country's own citizens, for which foreigners must pay, are similar to exports.

**The balance of trade.** — If we should put down in a list all the goods and services for which our people must pay foreigners during a certain year (or other period), and in another list all the goods and services for which foreigners must pay us during the same period, we should have what is called *the balance of trade*. Such a statement would be similar to an ordinary income account and would look something like this:

#### BALANCE OF TRADE OF COUNTRY A, 1925

<i>Due to Foreigners</i>	<i>Due from Foreigners</i>
Merchandise imports \$400,000,000	Merchandise exports \$425,000,000
Interest on foreign capital . . . . . 20,000,000	Interest on capital invested abroad . . . . 4,000,000
Expenses of travel abroad . . . . . 5,000,000	Expenses of foreign travelers in A . . . . . 2,000,000
Services of foreign ships . . . . . 2,000,000	Miscellaneous . . . . . 1,000,000
Miscellaneous . . . . . 3,000,000	
<u>\$430,000,000</u>	<u>\$432,000,000</u>

Since exports and imports are the chief items, we may call the two sides of this account the "import side" and the "export side," respectively.

**Not limited to exports and imports.** — People often make a mistake by assuming that the balance of trade is merely the statement of a country's imports and exports. It is true that these items are the most important ones and make up the bulk of the balance of trade. But they are not the whole balance of trade, just as an individual's statement of his receipts and expenditures for merchandise would not be his complete income account. Starting with this false idea of the balance of trade, people have drawn a good many false inferences about foreign trade and tariffs. Such errors may be avoided by starting with a correct idea of the balance of trade.

**The account is balanced by gold payments.** — The two sides of the balance of trade do not have to be exactly the same for any year. That is, the account does not have to "balance" exactly. In any year, one side is likely to be somewhat greater than the other. The difference is met, from time to time, by payments of money either to or from foreigners. The only money that is acceptable in international payments is gold. In connection with international trade, therefore, it is customary to speak of "gold" instead of "money."

**Gold payments are small: they tend to offset each other.** — The difference that has to be settled by money payments is generally a very small fraction of the whole trade balance. Moreover, the difference does not generally remain on one side of the account for a long time. If the excess is on one side for a year or two, it is almost certain to swing to the other side for the next year or so. Thus the inflow of money for one or two years tends to

be balanced by the outflow in the next few years. No country ordinarily has a steady inflow or outflow of money for any long time.

**The reason.** — The foregoing statements are very important and need some further explanation and proof. Let us suppose that a country had for a number of years a steady excess on the export side of its balance of trade. This would mean, of course, that a steady stream of gold would have to flow into the country in payment of the debt due from foreigners. This gold would go into the country's monetary system and so increase the quantity of money. As we have learned, an increase in the quantity of money, other things being equal, causes an increase in the general level of prices. Prices in the country under consideration would therefore rise, and, likewise, prices in other countries, which were losing some of their gold, would fall. This would make the first-mentioned country a good place to sell in and a poor place to buy in. The result would be to stimulate the imports and check the exports, resulting finally in an excess on the import side of the trade balance, and so reversing the condition which caused the inflow of gold. In the preceding chapter we saw how the prices of a particular article in different places control the trade in that article. Now we see that the general price levels in different countries control the general trade between such countries.

The foregoing paragraph proves that a country cannot have a long-continued excess on the export side of the trade balance, because, as soon as such an excess appears, the resulting inflow of gold starts forces at work which tend to throw the excess to the other side of the account. In the same way it is proved that there cannot be a continued excess on the import side, causing a continued draining away of the country's gold. These economic

forces are well illustrated by the swinging of a pendulum. The further the pendulum swings to the right, the stronger is the pull of gravity drawing it toward the left, and *vice versa*. Thus the pendulum always oscillates about the vertical position and never gets very far away from that position. So a country's foreign trade tends to balance. The greater the excess on the export side, the stronger is the tendency for goods to be imported, and *vice versa*. So the balance oscillates, now on one side, now on the other, never going very far or remaining very long on either side. Of course it will be understood that the oscillations of international trade are by no means so exact and regular as the swinging of the pendulum.

**The fallacy of the superiority of exports.** — Many people make the mistake of thinking that the two sides of the balance of trade are not equally favorable. They believe that exports are a good thing for a country, but that imports are harmful, or at best a necessary evil.

**Compare individual and domestic trade.** — This notion does not generally occur to people in case of individual trade or trade between different sections of the same country. If A, who is a lawyer, buys his shoes of B, a shoemaker, because he can thus get shoes better and cheaper than he could make for himself, and can also save his own time for his profession, at which he makes more profit than he could ever make at shoemaking, this is not considered a foolish act on the part of A. If the farmers of the south buy their farm machinery from manufacturers in other states, because that is the cheapest way for them to get it, few people would call their action foolish or harmful.

**The fallacy as stated.** — But when the same sort of thing occurs between the people of different nations, there are those who are alarmed. They say: "We ought

to export all we can; that brings money into the country and increases the prosperity of the people; but imports are bad; they take money away from the country and give it to foreigners." This notion about international trade was quite commonly held by influential men in the eighteenth century. Together with other similar notions, it was called "Mercantilism." One result was the coining of the terms "favorable" balance of trade and "unfavorable" balance, applied to an excess of exports and of imports respectively. The use of these terms has continued down to the present day, even by persons who understand perfectly that neither side of the trade balance is a bit more favorable or unfavorable than the other.

**Mistake as to importance of money.**— This belief in the superiority of exports over imports is the most common and the most serious fallacy about international trade. It is based on the notion that it is a good thing for a nation to have money (gold) coming in, in exchange for merchandise and services, and a bad thing to pay money out for other goods. It is sometimes asserted that only by an excess of exports can a nation become wealthy, just as a business man gets rich by selling more than he buys. This is all a mistake, arising from ignorance of economic truths.

**Proof: (1) No special advantage in having gold.**— The mistake can be proved by three lines of argument. In the first place, there is no particular advantage to the people of a nation in having gold rather than other things. Gold is simply one kind of wealth, useful because it satisfies certain human wants. These wants are chiefly for (a) a medium of exchange, (b) jewelry, and (c) teeth filling. Now these are important wants. But no one would claim that they are more important than

hundreds of other wants satisfied by other kinds of wealth, such as food, clothing, and coal. It does not profit people to go hungry or ill clothed in order to pile up gold. The old story of Midas illustrates this truth. And nobody has much respect for the miser who deprives himself of more important things in order that he may store up gold. The people of a nation will export their merchandise for gold when they need the gold more than the merchandise. This is advantageous. But it is exactly as advantageous to pay out their gold for imports when they need the imported merchandise more than the gold. The purpose of international trade is not to get or pay out gold. Its purpose is to exchange those things which the people produce cheaply and have in abundance for other things which can be obtained more cheaply from foreigners. As we have learned, a little gold comes in and goes out from time to time, in order to balance the account. But the import and export of gold is an insignificant part of the business. For example, gold imports and exports are usually less than one twentieth of the international trade of the United States.

(2) **Impossible to pile up gold by foreign trade.** — Even if it were advantageous for a nation to pile up gold by means of an excess of exports, it is not possible. This has already been proved in this chapter (page 310).

(3) **A nation's wealth does not grow by accumulating gold.** — Finally, the idea that a nation becomes wealthy by accumulating gold from foreign trade is the crudest error of all. The wealth of the people of the United States is estimated at nearly 300 billion dollars. The total amount of gold (coin and bullion used as money) in the country is about 4 billions, or about  $1\frac{1}{3}\%$  of the national wealth. According to estimates of the United States census, the nation's wealth was 44 billion dollars in 1880

and 89 billions in 1900. This was an increase of 45 billions in twenty years. During the same twenty years the gold coin and bullion in the country increased from \$352,000,000 to \$1,034,000,000. We added 45 billions to our wealth; less than one billion to our gold. Does this look as if our wealth came from gold received in foreign trade? The growth of a people's wealth does not consist of gold; it consists chiefly in the increased value of its lands and buildings, its factories and railroads, its farms and homes, and other kinds of wealth vastly more important than its gold.

**Equally true of individual wealth.** — When people say that the business man becomes wealthy by selling more than he buys, they make the same kind of mistake. Suppose Mr. Brown tells you that, on account of a prosperous business year, he has added \$100,000 to his wealth. You say: "Then I suppose you must have sold \$100,000 more of goods during the year than you bought and so accumulated \$100,000 in money; please show us the \$100,000." Mr. Brown would be mystified. The chances are that he has no more money either on hand or on deposit in the bank, than he had at the beginning of the year. And he will tell you that he bought just about exactly as much as he sold during the year. As fast as he received money from the sale of goods, he spent it. He bought more goods to keep up his stock, he put an addition on his factory, he bought some new machinery, he remodeled his home and bought a new automobile, he bought a farm and some stocks and some government bonds. Here is where we find his increased wealth, not at all in his stock of money. Exactly the same with the people of a whole nation. A nation, like an individual, grows wealthy, not by selling more than it buys, but by producing more than it consumes.

## EXERCISES

1. During a war, why do nations tend to become more self-supporting? Show that this effect of war impoverishes the people of a nation.

2. Suppose that within a certain year the United States exported \$1,000,000 more goods than it imported. Would this mean that this country received a million dollars in gold from abroad during that year? What other facts do we need to know before we can ascertain how much gold was imported or exported that year?

3. It is sometimes said that the importation of gold by any country is self-limiting. Explain why an inflow of gold tends to stop itself.

4. In what way does the United States gain from its foreign trade? Does this gain depend at all on the *balance of trade*? Explain.

5. To what uses can we put the gold which we receive when the balance of trade is "favorable"? Can it be shown that this gold is more useful to us than other commodities of foreign origin which we might have received in place of it?

6. Are a nation's exports more beneficial to its people than its imports? Prove your answer.

7. Does a business man become rich by selling more than he buys? Prove your answer.

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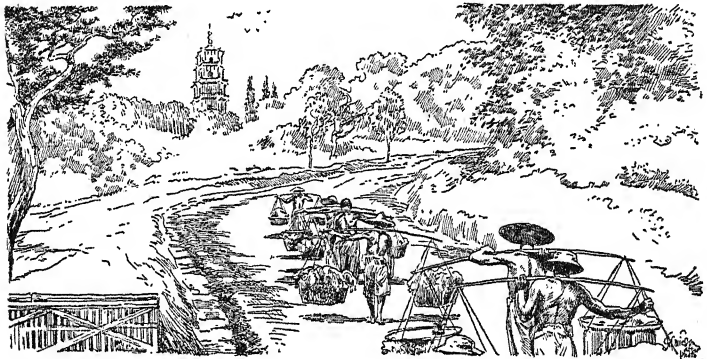


## CHAPTER XXXI

### TRANSPORTATION. THE RAILROADS

Transportation, no less than trade, is necessary to make possible the benefits of division of labor.

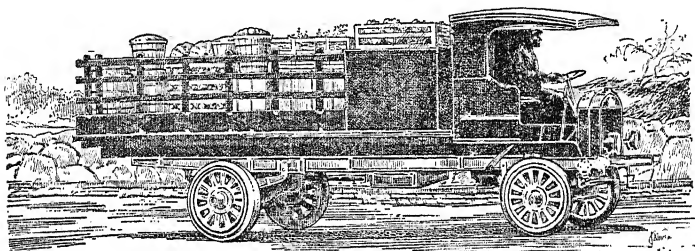
Suppose there were no transportation. — Suppose for a moment that there were in the United States no steam



TRANSPORTATION IN PART OF THE FAR EAST, WHERE THERE  
ARE NO RAILROADS OR AUTOMOBILES

or electric railroads, no automobiles, no canals, and no ships on the lakes and rivers or on the ocean. Of course there would be hardly any territorial division of labor. There would also not be much personal division of labor. The people of each little community, town, village, or county, would have to depend on their own efforts and on their own land and capital for almost everything. For example, people living along the shores of New England

would have plenty of fish at a low cost. But they would find it hard to raise wheat and corn on their rocky fields, and what grain they had would have a high cost of production and so a high price. On the rich soil of the Mississippi valley wheat and corn would be raised cheaply, but that would do the New England people no good. Our southern states are the greatest cotton region in the world, and cotton is raised there at a very low cost; but that would not help the New England residents to get cheap clothing. Moreover there would be a multitude of useful things, now enjoyed as a matter



TRANSPORTATION IN THE UNITED STATES BY AUTOMOBILE TRUCK

of course, which they could not have at all. One of the cheapest kinds of fruit, on nearly every American table, is the banana. It is raised hundreds and thousands of miles away. Without transportation most of us would have to do without tea, coffee, sugar, spices; and this is just the beginning of the list.

Again think what would be the condition in manufacturing. Would there be huge flour mills in certain cities of the middle west? Would there be great shoe factories in New England towns and huge steel mills in the middle states? Certainly not. The only thing that makes large cities and great factories possible is transportation.

The great cotton mills of a few cities now produce cotton cloth for the whole country, and, by means of a high development of division of labor, they produce it very cheaply. Such factories can exist only if they can sell an enormous output. But the people themselves of these cities use only a small fraction of the product. If they could sell their product only to the people in their own town, these great factories would have to go out of business. Cotton cloth would have to be made, at a heavy cost, in small factories, or even in the people's homes and in little shops by means of the old-fashioned spinning wheel and the hand loom. The people of the whole country would lose their chance to buy cotton cloth at a low price.

**Transportation reduces costs of production.** — The great thing that transportation does for us is to keep down the costs of production, to make things cheap. In each of the different parts of the country and of the world there are certain things which can be produced at a low cost of production. Transportation gives other parts of the country and the world the advantage of this low cost. Most things can be produced more cheaply where they are made by wholesale methods in large establishments. Transportation makes this possible and gives us all the advantage of the lower prices that result.

**Importance of transportation.** — It would be difficult to exaggerate the importance of transportation in the production of wealth. In fact, the whole difference between the scanty production of the savage tribe and the enormous production and accumulation of wealth of the modern civilized nation may be measured by the development of transportation. Were it not for our system of railroads, canals, and ocean shipping, the whole middle western country of the United States would

be a sparsely settled wilderness, the city of New York would be an insignificant village, Chicago would be a frontier trading post, and we should all be forced to live upon the products of our own immediate neighborhood and our own efforts, mostly produced at heavy cost. We should be deprived of all the useful products of other lands and climes. Few subjects in economics are more worthy of study than the modern transportation system.

**Railroads.** — As every one knows, the bulk of land transportation is handled by the railroads. We can best learn about the economics of transportation by studying the American railroad system. The railroads of the United States are owned and operated by great corporations, in which thousands of persons have invested wealth through ownership of their stocks and bonds. The railroads are thus private wealth operated by their owners for private gain like any other business.

**Railroads dependent on government.** — But the railroads are not simply private businesses. They have very important public relations. In the first place, the railroads could not have been built without the aid of the government. To lay out its lines, a railroad must secure a "right of way," that is, a narrow strip of land on which to lay its tracks. This land has to be bought from the persons who own it. A few owners, by refusing to sell, could block the whole enterprise. This would almost certainly happen if the railroad company did not have the aid of the government. The government has the right to purchase private property for public purposes, even though the owner may be unwilling to sell. And if the government and the owner cannot agree on a price, the price to be paid by the government is "appraised," or determined by an impartial officer or board. This right of the government is called the *right*

of *eminent domain*, and the process of seizing private property and purchasing it at an appraised price is called "*condemnation*." (See Chapter VI, p. 47.) The government, exercising its right of eminent domain, comes to the aid of the railroad company and enables it to secure the land it needs for its right of way. The government sometimes helps the railroad in other ways, as by the gift of public lands or by aiding it in securing capital through the issue of its stocks and bonds.

**Public dependence on the railroads.** — The government thus coöperates with the railroad because it believes that the public will derive a benefit from the railroad. In return for the government's aid, the railroad company is required to give proper service to the public. A certain minimum number of trains, passenger and freight, must be run, schedules must be maintained, winter and summer, rain or shine, certain standards of equipment and service must be kept up, safety devices must be installed; and for its services the railroad must make reasonable charges. To insure the carrying-out of its part of the bargain, the railroad must submit to regulation of its business by the government. Thus the United States Interstate Commerce Commission and various state railway and public service commissions exist to regulate the railroads.

**"Public utilities."** — A railroad is not merely a private business, like a grocery store. The store can sell what it pleases, it can refuse to sell certain things, or it can go out of business altogether, and it can charge any prices that it can get. If the people do not like its goods or its prices, they do not have to trade with it; they can go elsewhere. Not so with the railroad. The public are dependent on the railroad; if the railroad does not give good service, the people have generally nowhere else to

turn. The prosperity of their business, their pleasure and comfort and health, even their lives," are dependent upon the regular and adequate service of the railroads. The public has a stake in the railroads and, in return for the privileges which the railroads have received, the public has a right to insist upon adequate service and reasonable charges. It is on account of this relation between the railroads and the public that the railroads are called *public utilities* or *public service corporations*, as distinguished from ordinary private business.

**Monopolies of organization.** — We come now to another important peculiarity of the railroads; they generally tend to become "monopolies of organization," a form of monopoly that was mentioned in Chapter XX and will now be more fully explained in our study of the railroad business. In Chapter XIX we learned that some industries operate under conditions of "decreasing costs"; i.e., the greater the amount of the product, the less does it cost per unit. The railroads furnish a fine illustration of this sort of industry and of the tendency of such industries to become monopolistic. Let us see how it works out in the railroad business.

**Decreasing costs.** — The building of a railroad is enormously expensive. The land for the right of way is costly. The construction of the roadbed and tracks is a heavy bill. Stations and terminals, locomotives and cars, and other equipment are all expensive. The railways of the United States have cost on the average from \$60,000 to \$70,000 a mile. Many millions of dollars must be invested in the capital of a modern railroad system. This is called *fixed capital*, because it is in such form that it can be used only in the railroad business; it cannot be taken out and devoted to some other use if the railroad should prove unprofitable. Every railroad

has to have a huge fixed capital. This capital must be bought and paid for, repaired and kept in good condition, regardless of whether the railroad is doing much or little business. It follows that if the railroad is doing only a little business the cost per unit will be greater than if a large business is done. The more the business, the less is the cost per unit. In other words, we have an industry operating under conditions of "decreasing costs." And the reason is the presence of a large fixed capital, or *plant*. Of course there is a limit to this. When the railroad has so many passengers and so much freight to carry that its stock of locomotives and cars is not sufficient, it will have to buy more. Increased business may necessitate larger and better stations and terminals. Finally it may have to widen its right of way and lay more tracks. All this of course adds to the fixed capital and increases the cost. But thereafter the condition of decreasing costs appears once more; with increased business the costs again diminish until once more it becomes necessary to increase the plant.

**Monopoly more economical than competition.** — An important result of this condition of decreasing costs is that transportation can be furnished more economically by one railroad than by two or more competing railroads. If one railroad can handle the business, it would be a great waste of capital to build a second costly plant; and the business, divided between the two railroads, would evidently cost more to handle than if performed by a single railroad. Even when the traffic becomes too great for one railroad to carry, it is cheaper to increase the plant of that railroad than to build an entirely new railroad. The first road need only add new tracks, at a cost far less than the expense of laying out and grading an entirely new roadbed. Instead of building a whole

new set of stations and terminals, it need only add to the size of certain ones and perhaps build a few new ones. The old railroad can therefore enlarge its plant and take care of the increased business more cheaply than could be done by building a new railroad.

**Tendency to monopoly.** — It follows that the railroads tend to be monopolies. This is because the monopoly can perform the service more economically than can be done by competing railroads. Furthermore, the monopoly, if properly regulated, is to the advantage of the public, simply because it is more economical.

**"Cutthroat" competition.** — Another reason for the tendency to monopoly is the peculiar character of the competition between concerns operating under conditions of "decreasing costs." Each concern sees that the more business it can get, the lower will be its costs. It is therefore especially eager to take business away from its competitors and, if possible, to drive them out of business. It may even be willing temporarily to do business at a loss in the hope of driving its competitors out of business. This kind of competition is called *cutthroat competition*. Let us see why it is especially important in the railroad business.

**Railroad expenses.** — A railroad gets its income mainly from the sale of tickets to passengers and the payments made by shippers for carrying freight. Its expenses are of many kinds but may be classified into three principal groups.

(1) **Fixed charges.** — First there are the *fixed charges*, which means *those expenses which have to be borne whether any business is being done or not*. The chief item is interest on the railroad company's bonds. The company has borrowed money, usually for its fixed capital, and the lenders have a right to their interest whether the



road does a big business or a small business or no business at all.

All other expenses are called *operating expenses*, because *they continue only while the road is doing business*. If the road should go out of business, the fixed charges would continue, but the operating expenses would cease.

(2) **General operating expenses.** — Operating expenses are divided into two classes, *general operating expenses* and *particular operating expenses*. The former are those *operating expenses whose amount does not depend very much on the amount of business done*; for example, the salary of the president and other chief officers of the company, and a good deal of the cost for heating and lighting stations, protecting and keeping up the plant. Such expenses as these will be about the same when the road is doing a big business as when its business is small.

(3) **Particular operating expenses.** — Particular operating expenses, on the other hand, *are those operating expenses which apply to particular units of business and whose amount therefore varies quite closely with the amount of business done*. For example, the amount of coal burned in the locomotives depends on the number of trains run and on the number and weight of cars in the trains. The wages of the train crews also vary with the amount of business done.

**Railroad expenses and "cutthroat" competition.** — When a railroad increases the number of passengers and freight carried it increases its particular running expenses but does not materially increase the general operating expenses or the fixed charges. Evidently the total of all the expenses becomes less on the average as the railroad succeeds in getting more business. The way to get business away from a competitor is to lower the price charged. When two or more railroads are competing

for the same business, the tendency is for each to try to attract business from its rivals by cutting the rates charged for carrying passengers and freight. This is no more than happens in ordinary competition. But ordinary competition, as we have learned, has a limit, in that no competitor will for any considerable time sell goods or services for less than they cost him to produce. In the "cutthroat" competition between railroads, rates may be cut down to cost and right on below cost for a long time. This surprising fact will be made clear by studying a simple example.

Let us suppose that a certain railroad company had the following income account for the year 1920 (for simplicity we will assume that the entire business of the railroad consisted in carrying freight; there was no passenger business):

<i>Income</i>	<i>Expenses</i>
From carrying freight	Fixed charges (interest
(400,000,000 ton-	on bonds) ..... \$1,000,000
miles at 1¢) . . . . . \$4,000,000	General operating exp. 500,000
	Particular operating
	exp. . . . . 2,000,000
	Balance (profits) . . . . . 500,000
	<u>\$4,000,000</u>
	<u>\$4,000,000</u>

**The "ton-mile."** — The term *ton-mile* is the unit in which railroads customarily measure their freight business. It is *the equivalent of carrying one ton of freight one mile*. Thus a ton of freight carried from New York to Boston, a distance of 225 miles, counts as 225 ton-miles. Ten tons carried 1 mile count as 10 ton-miles. Twenty tons carried  $3\frac{1}{2}$  miles count as 70 ton-miles.

**Rates below cost.** — The railroad in our illustration gets 1 cent for each ton-mile that it carries. This 1 cent pays for the following items of cost as shown by the

other side of the account: fixed charges,  $\frac{1}{4}$  cent; general operating expenses,  $\frac{1}{8}$  cent; particular operating expenses,  $\frac{1}{2}$  cent; and profits,  $\frac{1}{8}$  cent. Now suppose there is a competing railroad and our road is trying to get some additional business which the competing road also wants. Both roads begin to cut prices. How far can our road afford to go? It might offer to take the freight at  $\frac{7}{8}$  cent a ton-mile. That would be just equal to cost. Could it go lower? On first thought one would say: No, it can't afford to do business at less than cost. But let us consider a moment. Suppose it could get some new business at a rate of  $\frac{5}{8}$  cent. Should our road take it? The new business would not increase the fixed charges at all, nor the general operating expenses. The only additional cost that comes from taking new business is  $\frac{1}{2}$  cent a ton-mile for the particular operating expenses relating to the new freight. Then at  $\frac{5}{8}$  cent, our road would have  $\frac{1}{8}$  cent profit on each ton-mile, after paying all the additional cost. Any rate above  $\frac{1}{2}$  cent will be better than not to get the new business at all. Any rate below  $\frac{1}{2}$  cent would mean that our road would lose on each ton-mile of new freight carried.

**The results of "cutthroat" competition.** — So far we have assumed that our railroad had plenty of business at 1 cent a ton-mile to pay for its fixed charges and general operating expenses. But when two railroads start on a "rate war" of "cutthroat" competition it will not be long before a good part of their business is being done at rates just sufficient to cover particular operating expenses, and there is not enough revenue to pay the fixed charges and general operating expenses. They are now on the straight road to bankruptcy. And it will do no good to refuse to take business at such ruinous rates. It is better to take the business and

have even a little above particular operating expenses to help out on fixed charges, rather than to leave the business to the rival road and have nothing at all toward fixed charges. So the "rate war" goes merrily on. It will end only when one of two results is reached: either one road gives up and goes out of business, leaving the other road in control of a monopoly, or, as generally happens, the two roads get together and form a combination, agreeing upon a division of the business or upon rates that will be profitable. In either case competition has ceased and monopoly or combination has appeared.

We see, then, (1) that the railroad business is more economically performed by a monopoly than by a number of competing roads; and (2) that competition between railroads tends to result finally in combination and monopoly. In the next chapter we shall look further into the matter of railway rates.

#### EXERCISES

1. It is sometimes said that the railroads enrich the people of the United States to the extent of the profits earned by the owners of the railroads. Show that this is not the real service of the railroads to the people of the United States. How can we measure the service which the railroads render our people?

2. Make up a definition of the term "public utilities." Make a list of industries which you would place in this group. Give reasons.

3. Why does not competition in the grocery business become "cutthroat competition"?

4. Make a list of the different kinds of expenses involved in the railroad business and point out the differences between them. Which of these expenses is the cause of decreasing costs? Why?

5. The policy of our government for a long time was to forbid monopoly in the railroad business. What was the probable reason such monopoly was feared? Show that this was not a wise policy.

References for further study. — Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. II, pages 389-395.

## CHAPTER XXXII

### RAILWAY RATES AND RAILWAY REGULATION. SOME OTHER PUBLIC UTILITIES

**Joint costs.** — There are other interesting features of the railroad business besides those studied in the preceding chapter. One of the most important is that it is never possible to tell what it costs to perform any particular service. What does it cost the New York Central Railroad to carry a ton of wheat from Chicago to New York? We could get some idea of the cost of running that particular train. But that train may have carried, not only wheat, but a score of other kinds of freight, farm machinery, automobiles, canned vegetables, dressed meat, lumber, and so on. How can we divide the cost of running the train among these different kinds of freight? We cannot divide it merely according to weight. It would be absurd to say that the cost of carrying a ton of wheat in a carload lot was the same as for a ton of miscellaneous freight made up of fifty small packages each requiring separate handling. There is no possible way of making the division that would be of any value. And this is only the beginning of the difficulty. The cost of running the train is by no means the whole cost of carrying the ton of wheat. There is also the cost of keeping the track in repair, the maintenance of the stations, the wages and salaries of station masters, section hands, and other workers, up to the president of the company, and the interest on the borrowed capital.

All these services were necessary in order that a ton of wheat might be carried from Chicago to New York. But they also served for carrying millions of other parcels of freight over hundreds of different routes and, still more difficult, for handling the railroad's passenger business. There is no possible way of separating railroad costs between freight and passenger business or between the different kinds of freight. *Costs which cannot be assigned to particular units of service are called joint costs.*

“Charging what the traffic will bear.” — The fact that most railroad costs are “joint costs” has made it impossible for the railroads to fix their rates upon the basis of cost of performing the service. This is different from ordinary competitive prices, which, as we have seen, are normally equal to the cost of production. A railroad company ordinarily puts its rate on each particular kind of freight at the point at which it can get the most profitable business. It finds that it can charge high rates for goods of great value and small bulk. A ton of watches is worth thousands of dollars; a ton of coal is worth only \$5 or \$10. The railroad can charge the shipper of watches a high rate without adding very materially to the cost of the watches at the end of the haul. If a similar rate should be put on coal, it would make the coal so expensive that no one could buy it at the end of the haul, and therefore it would not be shipped and the railroad would not get the business. The railroad therefore makes a high rate on watches because it can get the high rate, and it makes its rate on coal low enough so that it will pay people to ship coal. So it is with all the different kinds of freight. On each kind the railroad makes a rate as high as it can and still get a profitable business. This method of determining rates is called *charging what the traffic will bear.*

**Effect of competition on rates.** — In fixing rates, it makes a great difference whether a railroad has competition or not. Every railroad has a monopoly on its *local* business; i.e. the business between points on its system which are not connected by another railroad. On this business the railroad can charge high rates on the principle of "what the traffic will bear" without much interference. But there is likely to be competition from other railroads for the *through* business, by which is meant the business from one end of the system to the other or between important places connected also by another railroad. To get its share of this business the railroad will generally charge rates a good deal lower than on its local business. Indeed it is on the through business that "cutthroat" competition is likely to take place, with the results which we have seen.

**Rate discrimination.** — With railroad rates determined as they are, there is certain to be *discrimination*; i.e. *different treatment for* (1) *different kinds of goods*, (2) *different places*, and (3) *different persons*.

(1) **Discrimination between goods.** — *Discrimination between kinds of goods* is, as we have seen, a necessary part of charging what the traffic will bear. It always occurs, whether there is competition or not, and it needs no further explanation.

(2) **Discrimination between places.** — The other two forms of discrimination are the result of competition. As we have seen, local rates are likely to be high, and through rates, low; this of course causes *discrimination between places* on the same railroad system. Let us study some examples. Figure 24 represents five cities on three railroads. The X. & Y. R. R. will charge high rates on the local business between A and B, B and C, C and E. But there will be low rates between A and E because there

is competition here with the M. & N. R. R. The rates from D to E are likely to be higher than from A to E, even if the distance is shorter, because the P. & Q. R. R. has no competition here.

Now let us suppose that there are flour mills located at each of the places A, B, and D, and that they are all selling flour in the market of E. The millers at D may find that it costs more to get their

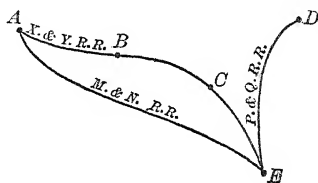


FIG. 24

flour to market than the flour shipped from A. This injures them and helps their competitors in A, and it does not appear reasonable since D is closer to E than A is.

**"Long and short haul" question.** — But the case of the miller at B is even more remarkable. He may find that the rate on his flour to E is actually higher than the rate from A to E, though the latter route includes the route from B to E, with the additional distance A to B. This favor to his competitors in A looks highly unreasonable to the miller at B. This situation illustrates the famous "long and short haul" controversy. It is generally considered that it is not reasonable to charge more for a short haul than for a longer haul which includes the short distance. The United States government has finally forbidden such discrimination, with certain exceptions. But this is such a natural result of railroad competition that it has proved impossible to stop it entirely.

Discrimination between places is a very serious thing. Cities may be made prosperous or ruined by specially favorable or unfavorable railway rates. Whole sections of the country may depend for the prosperity of their



industries upon the rates charged by the railroads. Yet discrimination is absolutely inevitable where there is competition, and it is doubtful if it could be entirely removed even under monopoly.

(3) **Discrimination between persons.** — *Discrimination between persons* is another result of railroad competition. Some shippers have such enormous quantities of goods to transport that it becomes very important for the competing railroads to get their business. The railroads are thus led to offer cut rates by secret agreements with certain favored shippers. The big shippers also take a hand in the game and, by playing one railroad off against another, try to get the best possible rates for themselves. There has been a great deal of this sort of discrimination in the railroad history of the United States. It is said that one of the chief causes of the growth and power of certain large corporations was the special favors they received, by secret agreement and otherwise, from several of the great railroads.

Nothing can be said in favor of this kind of discrimination. Public opinion is united against it, and the United States government has made it illegal and sought to put a stop to it. However, so long as competition exists between the railroads, the temptation to work for personal discriminations, both on the part of the railroads and the great shippers, is so great that it is doubtful if the practice can ever be entirely stopped.

**Monopoly vs. competition.** — We have already learned that railroad service is likely to be performed more economically by a single company with a monopoly than by two or more competing roads. We now see that rate discrimination of various sorts is an inevitable result of competition. For both of these reasons it is the general opinion among those who understand the railroad prob-

lem that a monopoly, properly regulated, is more favorable to the public interest than railroad competition. There are those who still consider competition advantageous, because it makes certain rates lower. But it has been shown that such low rates are only temporary. Consolidation and monopoly will come sooner or later, and so the end of "cutthroat" rates. And even while they continue, it is certain that temporary low rates, coupled with uncertainty and discrimination, are not in the interest of the public. Definite, honest rates, not subject to sudden and violent changes, giving equal treatment to all shippers, reasonable consideration to different classes of goods, and a square deal to all localities, would be worth far more to shippers and the public than occasional cheapness of transportation. Such rates can be had only when it is recognized that the railroad business is inherently a monopoly, and that properly regulated monopoly, not competition, is in the public interest.

**American railroad history.**—The history of the American railroads is an interesting story. We cannot go far into it here. Since the first railroad was built (in 1830), the growth has been extraordinary. By the time of the Civil War there were over 30,000 miles of railroad lines in this country. By 1900, this mileage had grown to over 190,000, and in 1921 it was more than 250,000. The whole country is now covered with a network of railway lines.

**Early reliance on competition.**—Many of the early railways in the United States were built and owned by the several state governments. The states did not make a success of their ventures into the transportation business. The state railroads were generally failures and by the middle of the nineteenth century had been given

up to private ownership. From that time the public did everything possible to encourage private companies to build railroads as widely and as rapidly as possible. Little thought was given to rates or service or to the necessity of government regulation, the general idea being that competition between the railroads would insure to the public good service at rates just high enough to cover the cost.

**Results of competition.** — Gradually the American public woke up to the fact that things were not going as expected. Railroads were being built and rapidly extending over the country. This was as it should be. But there was not complete satisfaction with the service given, and there was widespread dissatisfaction with the rates charged. It was generally felt that the railroads were asking altogether too much, and this feeling was strengthened by resentment at the large profits of some of the railroads and the handsome private fortunes that were being accumulated out of the railroad business. Competition, instead of producing the beneficial results expected of it, was actually producing the results which we have learned are inevitable. There was discrimination. Some sections found their industries throttled by high rates while other places were flourishing under special rate favors. Personal discrimination was common, including the notorious abuse of the system of free passes. There was suspicion that in all this discrimination the private interests of the railway managers were unfairly favored.

**Breakdown of competition.** — Furthermore, competition was already showing the tendency to break down and lead to monopoly, which we have learned is a natural result of railroad competition. The railroad managers were seeking to avoid the ruinous effects of cutthroat com-

petition by forming combinations of various sorts, especially "pools", dividing territory or traffic or profits, and rate agreements. The railroads were also powerful in politics and obtained favorable consideration of their interests by the United States Congress and the legislatures of many states, by methods which were not always above reproach. During all this period some of the most prominent railway managers showed a frank contempt for the public interest, which helped fan the flame of popular resentment.

**Government regulation.** — The public finally demanded that something be done by the government. The first attempts were made by the states, beginning about 1870. State regulation was not very successful, largely because the railroad business is not confined to state lines. No state could control the railroads beyond its own borders, and under the United States constitution the states are forbidden to interfere with interstate commerce. The United States government first took a hand in 1887, when the Interstate Commerce Act was passed and the Interstate Commerce Commission established. Since then there has been a great deal of legislation, and the railroads have come more and more under the control of the United States government.

**Mistakes of regulation.** — Our regulation of the railroads has not all been wise or successful. The public has generally failed to understand that monopoly in the railroad business was inevitable and on the whole beneficial. They saw the tendency of the railroads to form combinations and agreements, while at the same time they were experiencing the evils which have been described. Failing to see that these evils were mostly the results of competition, the public thought they were the result of combination and that the remedy was to forbid

agreements and compel the railroads to compete with one another. This was the general character of the regulation down to the World War. Many abuses were corrected, but some of the worst evils of discrimination continued. The rate tangle was only partly relieved. Pools and rate agreements being forbidden, the railroads were forced into secret arrangements to accomplish the same ends. Another result was the creation of actual consolidations, great railway systems formed out of a number of smaller roads. This the law could not prevent.

**Decline of railway profits.** — One unforeseen effect of the regulation of the railroads was in connection with the world-wide rise in prices during the first fifteen years of the twentieth century. Railway expenses rose with all prices. But the Interstate Commerce Commission, now having control of railway rates, refused to permit a corresponding increase in rates. The railways were hard hit, their profits declined alarmingly, and some of the weaker roads faced bankruptcy. Investors did not care to put their capital into the business, and the railways were unable to maintain their plant. The country was threatened with failure of the railways to furnish adequate service.

**Experience of the World War.** — This was the situation in 1917, when the United States entered the World War. On account of war necessity the United States government took over practically the entire railway system of the country and operated it. The government at once found it necessary to do many of the things which had been forbidden to the companies. In particular, pools and combinations of various sorts were made and rates were greatly increased. Increased wages for railway labor and other increased costs added also to railway expenses. Financially the government operation

of the railways was not profitable, heavy losses being incurred. About a year and a half after the close of hostilities, March 1, 1920, the railroads were turned back to their owners. Certain guarantees were given to enable the railroads to get on their feet again. They were permitted to charge much higher rates than before the war. Also the laws were changed so as to permit and even encourage the agreements and combinations which we have seen are the natural steps in railway development.

**Public opinion toward the railroads.** — Before the war public opinion and the attitude of the government was distinctly hostile to the railroads. In the early days the railroads had snapped their fingers in the face of the public. Now the public had the upper hand, and people felt it was the time "to get even." There was a sort of poetic justice in this. But it was really quite foolish, for two reasons. First, injury to the railroads in 1910 would not punish the men guilty of railroad abuses in 1870. They had made their fortunes and left the business. There was no justice in punishing present owners and managers for the sins of their predecessors. And, secondly, the public needs the railroads. Regulation which forbids a fair profit to the railroads, frightens away investors, and leads to deterioration of plant and inadequate service, hurts the railroads, of course. But it hurts the public more. This is the sort of thing called "cutting off your nose to spite your face." It is probable that the war experience taught this lesson, for later railroad regulation has been along more reasonable lines, recognizing the double nature of the railroads as "public utilities."

**Street railways.** — The economic principles which we have learned concerning the railroads apply very closely

to the other forms of transportation and communication. The *street railways* of our cities are "public utilities." They have a special privilege from the city government in the right to lay tracks in the city streets. They serve the public, which has the right to demand certain standards of service and reasonable rates. The evils of competition and the superiority of monopoly are evident. Regulation by the government, city or state, is necessary. All of this is clear in the light of our study of the railroads.

**Express.** — The *express business* is handled in most countries by the railroads. In the United States it is in the hands of separate corporations, but very closely connected with the railroads. One result of the World War was the consolidation of nearly all the express business in the hands of one great company. The character of the express business as a public utility may be understood from our study of the railroads.

**Telephone and telegraph.** — *Communication* is mainly conducted by the *post office*, the *telephone*, and the *telegraph*. The post office, being everywhere a government business, will be studied in a later chapter (Chapter XLII). The telephone and telegraph are great private businesses in the United States. They are "public utilities," largely monopolistic, and subject to the same general principles as the railroads.

**Local public utilities.** — Mention may be made here of certain other "public utilities," generally concerned with the furnishing of services to city dwellers. These are the *water companies*, *gas companies*, *electric light companies*, and some other similar enterprises. Though they are not engaged in transportation, most of the principles which we have learned about the railroads will apply also to these *local* public utilities.

## EXERCISES

1. One shipper in Pennsylvania sends a ton of shoes and another shipper sends a ton of coal to Chicago. The ton of shoes contains a thousand pairs worth \$10 each at the shipping point in Pennsylvania; the ton of coal is worth \$7 at the shipping point in Pennsylvania. Assume that the railroad charges an "equal" rate of twenty dollars a ton for both shipments and show what the effect of this rate would be on the price of the shoes and the coal in Chicago. Is this rate really equal for the two shipments?

2. If rates were fixed by the principle of charging the same amount per ton for all kinds of freight, what kinds of traffic would fall off? Why?

3. Make up a definition for the expression "charging what the traffic will bear." What rule does the railroad manager employ in determining whether traffic will bear a high rate or not?

4. Why should discrimination between persons be prohibited by law?

5. Show that if there were no competition in the railroad business there would probably be no difference between the long haul and the short haul rates per mile.

6. It was once proposed that the government should control the practices of the railroads by building parallel lines alongside every important line and thus forcing these roads to compete for their business. Why was this an unwise proposal?

References for further study. — Seager, H. R., *Introduction to Economics* (1905), pages 460-475. Fetter, F. A., *Modern Economic Problems* (1916), pages 408-426. Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. II, pages 395-418. Ely, R. T., *Outlines of Economics*, Third Revised Edition (1916), pages 557-576. Hadley, A. T., *Railroad Transportation* (1900), (see Table of Contents.)



## CHAPTER XXXIII

### FOREIGN EXCHANGE

How do American exporters get their pay? — Jones & Anderson are cotton brokers in a southern city. Their business is to buy up cotton from the farmers in the neighboring territory and then to sell it to factory owners who want to make it up into thread and cloth. Much of their cotton is sold to persons in foreign countries. A great part of the cotton grown in our southern states is sold to manufacturers in England. Suppose Jones & Anderson have an order from a factory owner or another broker, in Liverpool, England, for 60 bales of cotton. They buy the cotton and ship it by railroad and ocean steamer to the purchaser in Liverpool. But how do they get their pay? If goods are sold at home the buyer pays with money or with a check. How is it with foreign payments? It would be very awkward if the English buyer had to send money by mail or express, and even at that the American seller would find it inconvenient to be paid in English money. Ordinary bank checks cannot be used, for they are usually not acceptable outside the country of their origin.

**Foreign exchange.** — International payments are made by means of *foreign exchange*. The process is somewhat more complicated than domestic payments, but foreign exchange need not be the dark mystery that it appears to those who have never studied it. It can best be understood by following carefully each step in (1) a sale

of American goods to a foreigner (an export), and (2) a purchase of foreign goods by an American (an import).

**An export of cotton.** — Our friends, Jones & Anderson, export 60 bales of cotton to John Brown, a cotton manufacturer in Liverpool, England, who has agreed to pay £1,500. Jones & Anderson see that the cotton is put aboard the train or ship, with orders to ship it to Brown. The railroad or steamship company gives them a receipt for the cotton, which is called a *bill of lading*. Jones & Anderson now proceed to draw a *bill of exchange* upon Brown.

**The bill of exchange.** — What is a bill of exchange? It is *an order drawn by a creditor directing his debtor to pay money to some third party*. The simplest example of a bill of exchange is the ordinary bank check (see Chapter XXIV, p. 233). The depositor is the creditor of the bank, since the bank owes him money on account of his deposit. He draws a check, ordering his debtor, the bank, to pay money to some third party named in the check.

In the case which we are studying, Jones & Anderson are the creditors and John Brown is the debtor, since he owes them the amount of money which he had agreed to pay for the cotton. When they made their contract to buy and sell cotton, it was agreed that Jones & Anderson should have the right "to draw upon" Brown whenever they shipped any cotton. The most important parts of the bill of exchange in this case would be as follows:

To John Brown, Liverpool, England.

Pay to the order of Merchants Bank.... £1,500.

(signed)

Jones & Anderson

We have here the two parties to the sale, the American exporter and the English importer. But how does the Merchants Bank come in? This is a bank in the city in which Jones & Anderson do their business. They name the bank in their bill of exchange because they intend to sell the bill to the bank. The bank buys the bill, paying for it about \$7,300, approximately the equivalent of £1,500 in United States money. Jones & Anderson have now shipped the cotton and received their pay. They have ordinarily no further interest in the matter. But the transaction is by no means finished. The bank has still an important part to play.

**The bankers' part in foreign exchange.** — When Jones & Anderson sold the bill of exchange to the bank they gave up the bill of lading and probably also an insurance policy, showing that the cotton had been insured against loss on the way. The bank takes the bill of lading, the insurance policy, and perhaps certain other papers and attaches them all to the bill of exchange. These papers attached to a bill of exchange are called the "documents." The bank now indorses the bill of exchange and mails it, with the documents attached, to some bank in England with which it has dealings and asks the English bank to collect the £1,500 from John Brown. Mail steamers are generally faster than the freight steamers, so that the bill of exchange probably reaches England before the cotton. The English bank presents the bill to John Brown and asks him to pay. He is generally glad to do so, because he cannot get his cotton from the steamship or railroad company without presenting the bill of lading, and he cannot get the bill of lading from the banker until he pays the bill of exchange, or makes some other arrangement satisfactory to the banker. This explains why the bankers insist on

the bill of lading when they buy a bill of exchange. It protects them, since the debtor cannot get his merchandise until the banker gives up the bill of lading. Mr. Brown pays £1,500 to the English banker, receives the bill of lading, and gets his cotton. That ends the transaction, so far as he is concerned. The English bank credits the £1,500 to the deposit account of the Merchants Bank, and this transaction is closed. It is true the American bank has not received its money, but it has what we shall see is just as good — a deposit credit with the English bank. Each bank, of course, has made a small charge for its services.

**An import of cloth.** — We must now see how the opposite sort of transaction is handled. J. B. Smith, a tailor in an American city, has bought 100 yards of woolen cloth from Gray & Sons, an English woolen manufacturing firm, for which he has agreed to pay £150. It might naturally be supposed that this cloth would be paid for in exactly the same way as the cotton, but with the American and English parties reversed. As a matter of fact, however, up to the time of the World War this was not the usual practice. In trade between America and England it has been the custom for bills, for imports as well as for exports, to be drawn by Americans upon Englishmen, not by Englishmen upon Americans. After the war the customary practice was reversed, and opinions differ as to whether this is a permanent or a temporary change. Since it is important to understand both methods of settling foreign accounts, we shall continue our study on the basis of the practice that prevailed before the war. Mr. Smith, instead of waiting for some banker to present a bill of exchange for him to pay, must get a bill and send it to his English creditors. For this purpose he goes to his bank (say

the Merchants Bank) and buys a bill of exchange for £150. He gives the bank approximately the equivalent in American money; that is, about \$730. The most important parts of the bill might read like this:

### Merchants Bank

*To Consolidated Bank, London.*

Pay to the order of *J. B. Smith*.....£150.

(signed) *Amos Kerr*, Cashier.

Smith indorses the bill, making it payable to Gray & Sons, and mails it to them. They take it to the Consolidated Bank and collect their money. The London bank charges the amount to the account of the Merchants Bank, and the transaction is closed.

**How bills of exchange offset each other.** — These two transactions are entirely separate, and yet they have a close economic relation. In the first case the Merchants Bank bought a bill of exchange from Jones & Anderson and had it collected and credited to its account with the Consolidated Bank of London. This credit gave it the right to draw bills of exchange upon the London bank, and when Smith came in asking for a bill on England the bank was able to draw one for him. When American bankers buy bills of exchange from the American exporters, they obtain a credit with foreign banks. When American bankers sell bills of exchange to the American importers, they draw upon their credit with the foreign banks. If the amounts of bills bought and sold were equal, then the American bankers could go on indefinitely settling the payments between American

exporters and importers and the foreign merchants with whom they are dealing, and without sending any money either way. As a matter of fact this is exactly the way in which the great bulk of international payments is settled. Practically all payments are by means of bills of exchange, and the payments due to foreigners from American importers for foreign goods imported are offset by the payments due from foreigners to American exporters for American goods exported. In the long run the amounts of these payments are just about equal; that is, the value of goods exported just about equals the value of goods imported.

**How gold shipments are handled.** — But from time to time there is inequality. Exports exceed imports, or *vice versa*. Then the difference has to be settled by gold shipped into the country or out of the country as the case may be. But even when gold is shipped, the merchants still make all their payments by means of bills of exchange. It is the bankers who attend to the shipping of gold. Let us see how this is done.

**An excess of exports.** — Suppose that the Merchants Bank finds a great many exporters coming to it to sell bills of exchange, while only a few importers come to buy bills. When the bank buys bills it pays out its cash and gets a credit in London. When it sells bills, it receives cash and reduces its credit in London. Now it is clear that, if the bank goes on buying more bills than it sells, sooner or later its cash will be used up, although it will have piled up a big credit balance in London. When this condition approaches, the bank will have to do something to replenish its cash. It might, of course, refuse to buy any more bills, while continuing to sell until it had accumulated the proper amount of cash. But the banker can do better than this. He says to his

next customer wishing to sell a bill of exchange: "I have reached the point where I cannot buy any more bills of exchange unless I can bring over from London some of the gold which is due me there. If you are willing to deduct from the normal price of your bill the cost of shipping from London the amount of gold which your bill calls for, I shall gladly buy it. Otherwise I must refuse." The exporter will almost certainly accept this offer. It is the best he can do. He has money due him in London. If he does not sell a bill of exchange, he will himself have to pay for shipping the gold to America, and the bank can do this cheaper than he can. He will therefore sell his bill to the bank for something less than the normal price (i.e., the normal price minus the cost of shipping the gold), and the bank will have the gold sent over from London. So long as exporters accept this price for their bills, they will be able to sell them indefinitely, no matter how much the country's exports exceed its imports. The bankers attend to bringing in gold from abroad to make up the difference between exports and imports.

**An excess of imports.** — The explanation of the opposite case is quite similar. Suppose imports exceed exports. Then the American bankers find a large number of importers coming to them to buy bills of exchange, while the number of exporters offering to sell bills is not so great. When the bankers sell bills they receive cash in their own offices but draw down their deposit credits abroad. If they sell more bills than they buy, they will sooner or later use up their balances abroad while piling up a large amount of cash in their own offices. Before this point is reached the banker will say to his customers: "My credit abroad is nearly exhausted. I cannot draw any more bills of exchange to sell to you unless I can

ship some gold over to my correspondent in London. If I sell you a bill of exchange I must charge you, in addition to the normal price, the cost of shipping to London the amount of gold called for by your bill." The customer has to pay this extra price. He must pay his debt in London, and the only other way he can do it is by himself sending the gold. This would cost him more than the bank will charge for the service. So he pays the extra price.

**Summary.** — To sum up, all international payments are made by means of bills of exchange, sold to or bought from the bankers. We see that in this way exports approximately balance imports without the necessity of sending much gold from country to country in payment; but that when exports are greater than imports gold is brought into the country, and when imports exceed exports, gold is sent out of the country, to settle the difference. And finally, we see that this import and export of gold is handled by the bankers.

**The rate of exchange.** — *The rate of exchange means ordinarily the price paid in the home country for one unit of the money of a foreign country payable in that country.* In other words, the rate of exchange is the price of foreign bills of exchange. For example, the rate of exchange in New York on London is the amount of American money that must be paid in New York for a bill of exchange calling for one pound of English money payable in London. The English pound is a gold coin containing metal worth a little more than \$4.866 in our money.

**Par of exchange.** — *The value of the foreign money unit in terms of the money unit of the home country (both units being gold) is called the par of exchange.* The par of exchange in America on England is \$4.866+. The price of London exchange in New York is generally in the



neighborhood of \$4.866. When it is exactly that, we say that exchange is "at par."

**Demand and supply of exchange.** — To understand how the rate of exchange is determined we must remember that the rate of exchange is simply a price (the price of foreign exchange) and that it is determined by the laws of demand and supply like any other price. The dealers in bills of exchange are the bankers. They buy and sell exchange just as a grocer buys and sells potatoes. The supply of bills of exchange comes from the exporters; as we have seen, they are the ones who draw bills of exchange on their foreign debtors and sell them to the bankers. The demand for bills of exchange comes from the importers; as we have seen, they are the ones who buy bills from the bankers in order to pay their debts to foreign merchants.

**When the rate of exchange is at par.** — The rate of exchange on any foreign country will be that price at which the amount of bills of exchange called for is equal to the amount offered. When London exchange is "at par" in New York, the rate of exchange is \$4.866. This means that at that price the amount of bills on London offered for sale by exporters is equal to the amount of bills that importers will take. When the imports and exports of the United States are about equal, the rate of exchange on London will be about at par. Since no gold has to be shipped, bills of exchange will be bought and sold at just about the value of the English pound in American money. Of course the bankers must make a profit, which they do by selling at a price a little higher than that at which they buy.

**When exchange is below par.** — Now let us suppose that the country's exports increase and become greater than its imports. This means an increase in the supply

of bills of exchange. We have just seen that when exports exceed imports, the bankers soon find that they must pay less than par for bills of exchange. This is just what we should expect according to the law of market price; i.e., that an increase in supply tends to cause a fall in price. So when the supply of bills of exchange rises (without an equal rise in the demand) the price must fall. When exports exceed imports, exchange is "below par."

**The lower limit to the rate of exchange.** — But now we come to a peculiarity of the rate of exchange, which makes it different from other prices. The rate of exchange, in normal times (exceptions will be noted later), can fall only so far; then it reaches a limit. Bankers will buy any amount of bills, so long as they can buy them cheap enough to enable them to import the gold. It costs about  $3\frac{1}{2}$  cents for the freight, insurance, commissions, and other expenses of shipping £1 of gold from London to New York. When the price falls  $3\frac{1}{2}$  cents below par (i.e., to about \$4.83) it becomes profitable for the bankers to buy any amount of bills that is offered. To the demand of the importers there is now added the demand of the bankers themselves, and so at \$4.83, no matter how great the supply, the demand will increase accordingly, and the price cannot fall below \$4.83.

**When exchange is above par. The limit.** — Exactly the opposite takes place when the country's imports become greater than its exports. Then the demand for bills of exchange increases, and the price rises "above par." Finally the bankers find that they must export gold, and they refuse to sell exchange except at a price equal to par plus the cost of exporting the gold. It costs about  $2\frac{3}{4}$  cents to send £1 of gold from New York

to London (the difference between the cost of importing and of exporting being due to a difference in interest on the money tied up in the transaction). The bankers will therefore charge about \$4.90 for London exchange. This is the upper limit of the rate of exchange. So long as this rate prevails, the bankers will sell any amount of exchange. To the supply of bills furnished by the exporters, the bankers add enough of their own bills drawn against exported gold to make the supply always keep pace with changes in the demand.

**The "gold points."** — The rate of exchange fluctuates between these two limits, which are called the "gold points," since they are the rates at which gold will be either imported or exported. The rate of exchange cannot fall below the lower "gold point" or rise above the upper "gold point." For example in the United States the rate of exchange on England must always, in normal times, be somewhere between about \$4.83 and about \$4.90.

**When money is not on the gold standard.** — In all of this discussion of the rate of exchange, it has been assumed that the monetary systems of both countries concerned are on the gold standard, so that all bills of exchange call for gold money or money that can be redeemed in gold. If the money of either or both countries is not on the gold standard, then the rate of exchange will be based on the actual value of the foreign money in terms of the money of the home country, and there will be no limit to the fluctuations of the rate of exchange. For example, when the United States money, during and after the Civil War, consisted chiefly of greenbacks, our money was depreciated. A dollar in greenbacks was worth less than a gold dollar. Or, in other words, more than a dollar in greenbacks had to be given for a gold

dollar. England was then on the gold standard. An English pound, being worth \$4.866 in gold, was worth more than \$4.866 in greenbacks. The rate of exchange on London consequently rose far above the normal limit, \$4.90. For years it was above \$6.50 and at one time it rose as high as \$14.60. It returned to normal when our government began to redeem the greenbacks in gold on demand, in 1879.

Things were reversed after the World War. Then the United States was on the gold standard, whereas English money was not redeemable in gold. An English pound was paper money, no longer worth \$4.866 in our money. Consequently the rate of exchange on England fell far below the normal limit, \$4.83. It was at one time (in February, 1920) as low as \$3.30. In January, 1923, it was \$4.66. All the European belligerent countries suspended gold payments during the World War. Their moneys all depreciated, most of them far more than in England. The German mark, for instance, declined till it was worth less than a cent in our money. Its gold value was about 24 cents. Consequently a bill of exchange on Germany for 100 marks, instead of selling in this country for about \$23.80 as before the war, was worth less than \$1. The mark continued to depreciate after the war. In January, 1923, the exchange rate fell to \$0.000035. In other words, \$1.00 would buy over 28,000 marks!

#### EXERCISES

1. The gold dollar contains 23.22 grains of fine gold; par of exchange between the dollar and the gold franc is 5.1826 francs per dollar. From this information calculate the amount of fine gold in the franc.
2. Suppose an American exporter of wheat sells a shipment worth ten thousand pounds to an English buyer. Explain the

steps which he must take to obtain payment for his wheat by means of a bill of exchange.

3. When we notice that the rates of exchange are rising in our country what may we infer regarding the balance of our foreign trade? Why?

4. Suppose the costs of shipping gold between New York and London double. What effect would this have on the gold import point in sterling exchanges? On the gold export point? Give reasons.

5. If there were no bills of exchange how would payment be made in foreign trade? Why would this state of affairs reduce the amount of trade carried on between nations?

6. Why were the rates on bills of exchange payable in England, France, and Germany immediately after the World War far below the normal par rates?

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## PART VI. RISK AND ITS PART IN MODERN BUSINESS

### CHAPTER XXXIV

#### RISK AND INSURANCE

**Importance of the future.** — We divide time into past, present, and future. But since the present is mathematically just a point in time, it is quite correct to say that all time is either past or future. In economics, the future is of more importance than the past. The past, with all it held of pleasure and pain, is gone. Nothing can change it. The future is before us. All the enjoyments we strive for, all the discomforts we hope to avoid, are in the future. All our economic activities are put forth for future effects. As we have seen (page 199), all that gives value to wealth is the expectation of future benefits.

**Uncertainty of the future.** — One of the most important characteristics of the future is its uncertainty. Of past events we know at least something with certainty. Nothing in the future is certain. Of course some things are more uncertain than others. The degree of uncertainty varies inversely with our knowledge. For example, the knowledge of astronomy is so exact that astronomers can predict with almost complete certainty the date of an eclipse of the sun or the moon. The knowledge of meteorology is far less complete. Experts predict, with a fair degree of assurance, the weather for a few days. When it comes to telling the weather a year hence, we

are almost entirely uncertain. The greater our knowledge on any subject, the less is our uncertainty as to future events in connection with that subject.

**Risk.** — It is because of our ignorance of the future that we are constantly subject to *risk*; *i.e.*, *the chance of loss or injury*. Risk is always present in every department of human life. We are concerned here only with economic risk; *i.e.*, risk in connection with wealth. Risk is closely and inseparably bound up with wealth. The possession of wealth always involves risk. There is the risk of its loss or injury from fire, flood, storm, shipwreck, theft, or other cause. There is always the risk that the expected future services, which alone give value to wealth, may not be realized. The lending of wealth involves risk, the chance that the borrower may prove unable or unwilling to repay. And so on.

**All production involves risk.** — Most important of all, production involves risk. All business is risky. Every business man "takes chances." The farmer takes chances on rain, sun, hail, insects, and other circumstances, some favorable, some unfavorable. Each year, as he plants his crops, he is uncertain of the harvest. The miner sinks his shaft, never quite certain of the amount or character of the ore that he will find or of the cost of obtaining it. The merchant buys a stock of goods, without knowing in advance who his customers will be, whether his stock will suit their tastes, how much they will buy, or what prices he can get.

**The risks of manufacturing.** — The risks of manufacturing are especially great. Let us suppose a man undertakes to go into the business of making woolen cloth. He first buys land, upon which he erects a factory building. He equips the factory with complicated and expensive machinery. He must then buy coal, oil, wool,

and other materials. Now he must hire an army of workers, to whom large sums of money must be paid in wages every week. It may be a year or more from the time the land was bought and the building started before the first finished cloth appears. Hundreds of thousands, perhaps even millions, of dollars have been spent before there is any product. All this for the sake of having woolen cloth to sell. The manufacturer at the beginning estimated that he would be able to turn out each year so many yards of cloth of such and such kinds. He estimated that he could sell the cloth at certain prices. And so he hoped to repay his costs and make a profit. But he could not be sure of any of these things. He could not be sure of his costs, the cost of the factory and machinery and materials, the wages he would have to pay. He could not be sure that the cloth he was to make would please the public taste. He was not certain that he could sell his cloth at the prices which he estimated would give him a profit.

At every point the manufacturer was subject to risk; he was taking chances. If things should work out as he anticipated, his venture would be a success. Things might turn out even better than he planned; then he would make an extra profit. But there was always the risk that costs would be greater than expected, that a change in fashion might make his goods unpopular, that more goods might be made than could be sold, that prices might be lower than he had calculated. Any one of these events might wipe out his profits or even cause the loss of part of the investment. All these risks are borne by the manufacturer.

This statement of the risks of manufacturing will serve to illustrate the risky character of most modern business.



Why modern business is risky. — Two characteristics of modern business make it especially risky.

(1) **Production is capitalistic.** — First, *production*, as we have learned, is *capitalistic*. Instead of making directly the things that satisfy our wants, we go through the "roundabout" process of making intermediate things, factories, machinery, railroads, warehouses, stores; i.e., *capital*, with the aid of which we finally get the things we really want. This capitalistic method adds greatly to the productiveness of enterprise, but it also adds greatly to the risk. The old-fashioned cobbler who made shoes by hand, ran little risk of loss, because he had hardly any capital tied up in his business. The modern shoe manufacturer, with millions of dollars of wealth invested in his factory, machinery, materials, and wages, runs the risk of losing millions if his business is a failure. When the transportation business was handled by the stagecoach, there was not much risk in it. To-day, when a railroad system may cost hundreds of millions of dollars, when a single ocean steamer may cost ten millions or more, the transportation business faces the risk of heavy loss.

(2) **Production is for a general market.** — In former days, production was carried on at the order of the customers. The cobbler did not make up a lot of shoes, hoping to sell them at profitable prices. He made a pair of shoes only when a customer ordered them, and they agreed in advance upon the price. There was very little risk in this. Some businesses are still run on these lines; for example the ordinary tailor, who makes clothes "to order," the custom shoemaker, and the like. But any one will recognize that these are the exceptions. Very little business to-day is done "to order." *Modern production is for a general market.* And so there is added the risk

of being unable to sell the product at prices that will cover costs and yield a profit.

**Gambling.** — Now everybody enjoys a certain amount of risk. If life contained no risks, there would be no adventure in it. Most persons like to "take a chance" now and then. This is the explanation of *gambling*. The essential characteristic of gambling is that a risk, which did not exist before, is created intentionally for its own sake. When A and B go to a baseball game together they need run no risk of losing money on account of the result of the game. But if they bet \$10 on the result, each then runs the risk of losing \$10, of course accompanied by the chance of winning. Here was a risk, quite unnecessary, created intentionally, just for the purpose of having some money at stake on the game. People sometimes gamble, not merely "for the fun of it," but because it seems to be an easy way to get money. It is true that, if the event turns out favorably, the money comes easily. But in the other event, money is lost just as easily. In most gambling, as at the horse races and other places where dealings are with professional gamblers, the chance of loss is greater than the chance of winning. Hence gambling is in the long run a losing game and a very poor way to try to make money. It is also a harmful and very dangerous form of amusement, because of the mental and moral injury it inflicts.

**Risk is generally undesirable.** — Economic risks in general are not desirable. People accept them as a necessary evil and do everything they can to avoid or diminish them. There are three important ways of doing this; namely, (1) *increased knowledge*, (2) *insurance*, and (3) *speculation*.

(1) **Risk diminished by knowledge.** — We have seen that risk is due to our uncertainty of the future and that

uncertainty depends on our lack of knowledge. The first way to reduce risk is to increase knowledge. Mankind has been doing this through all the history of the world and so steadily reducing certain risks. For example, in the days when men first went to sea in sailing ships, crossing the ocean was a terribly risky thing. Sailors took their lives in their hands, and merchants never felt safe about their goods on shipboard. Since those days men have discovered the compass and have added to their knowledge of astronomy, so that to-day the captain can tell almost exactly the position of his ship at any time. Steamships have generally taken the place of sailing vessels, so that sailors are not so dependent on the wind and the weather. Men have learned to build bigger and stronger ships. With the wireless, we can now communicate from the ship to the shore, and from one ship to another. People no longer regard an ocean trip as especially risky. Our increased knowledge has almost removed the risk. This is just one example of innumerable ways in which increased knowledge has removed or reduced the risks which formerly had to be incurred. As we go on extending our knowledge, we may expect many of our present risks to fade gradually away.

**Risk will always remain.** — But knowledge can never entirely banish risk. We can never hope to know the future completely. Moreover, as we learn to avoid one kind of risk, new risks are always taking its place. To-day we have made ocean navigation safe, but we now face the risks of air navigation, about which our forefathers never had to worry. In spite of the utmost possible human knowledge, then, risk remains and will continue.

(2) **Insurance.** — Everybody who owns a house runs the risk of having it destroyed by fire. Suppose there

are in a certain town 1,000 dwelling houses worth, on the average, \$5,000 apiece. Every now and then some one loses his home by fire. Let us suppose that on the average one house burns every year. Since nobody knows that his house will not be the next one to go, each owner runs the constant risk of losing his home, a loss on the average of \$5,000. Now suppose these 1,000 owners should form an association, to which all would contribute dues averaging \$5 a year for each. This would give the association \$5,000 each year. Then whenever a member lost his house by fire, he would be given the value of a new house out of the treasury of the association. It is clear that by this simple arrangement, each of our 1,000 house owners would be able to escape the risk of loss from destruction of his home by fire. In return for a small annual payment, which is certain, he escapes the risk of a large loss. This is a simple illustration of *insurance*, the most important means of avoiding risk. Notice that it is not the main business of insurance to *prevent* loss. There may be just as many houses burned as before. Insurance does not do away with *loss*; it does away with *risk*, by substituting a *small, certain cost* for the *risk of a large, uncertain loss*.

**Fire insurance.** — An association like that described above would be called a *mutual fire insurance company*, since the members (called *policy-holders*) band together to insure themselves. The business of insurance is sometimes carried on by regular corporations, in which stockholders invest their capital. The policy-holders are then not members of the association, but merely customers, who buy insurance at specified rates. If the amounts paid in by policy-holders (called the *premiums*) amount to more than the losses, there will be a profit, which may be divided among the stockholders in dividends. In a

mutual company, any profits are divided among the policy-holders themselves.

**Life insurance.** — Fire insurance is one of the oldest and commonest forms of insurance. But there are many other kinds. To-day life insurance is the most important of all. It might look at first as if, death being sure, there was here no uncertainty to insure against. But the uncertain thing about death is the exact *time* at which it will come to each one of us. Every man runs the risk of dying before he has been able to provide sufficient wealth to care for his wife and children. This is regarded as a very serious risk by most men, and so life insurance (i.e., *insurance against the risk of death*) has become very common.

**Life insurance rates.** — A *life insurance company*, as in the case of fire, may be either mutual or non-mutual. The policy-holder makes a contract with the company, agreeing to pay a certain small sum each year as long as he lives, in return for which the company agrees to pay a large sum to his widow or other person upon his death. The amount of the premium depends of course upon the amount which is to be paid at death. It also depends on the *age* of the policy-holder. From statistics which have been collected for many years, the insurance companies know how long, on the average, a person of any given age is likely to live. This is called his *expectation of life*. (For an example, see Chapter XV, p. 129.) Of course the younger a person is, the greater is his expectation of life, and hence the greater is the number of premiums which he is likely to pay. An insurance company will therefore insure the life of a young person, for any given amount, in return for a smaller annual premium than it will charge for insuring an older person's life for the same amount. In other words,

the premium rate for life insurance increases with the age of the insured. Since it is to the company's interest that the insured live as long as possible, no one can get his life insured unless a medical examination shows that he is in good health.

**Kinds of life insurance.** — The kind of life insurance just described is the simplest form, and is called *straight life* insurance. There are many other forms: the "twenty-payment," "endowment," "term," and so on. It is not necessary for us to study these other forms in this book.

**Other kinds of insurance.** — Besides life and fire insurance there are many other kinds of insurance. Ships and their cargoes are insured against loss from wreck at sea. Farmers insure their crops against loss from hail. Steam boilers are insured against explosion. The famous violinist, Kreisler, took out insurance against injury to his precious fingers. The Athletic Association of Yale University regularly insures against bad weather on the days of football and baseball games. The association has to pay a guarantee to the visiting team and incur certain other expenses whether the game is played or not. By taking insurance, it receives from the insurance company enough money to meet these payments in case the game is called off on account of bad weather. In fact, there is almost no human risk against which it is not possible to take insurance.

In the next chapter we shall study the third way of avoiding risk, namely, by speculation.

#### EXERCISES

1. Why does the advancement of science tend to reduce risk?
2. Why are industries which require a large fixed capital more risky than those whose fixed capital is small?
3. What is the difference between insurance and gambling?

4. Because a life insurance company cannot pay out to its policy-holders more than it takes in from them, plus a low rate of interest, many persons think the policy-holders do not gain from the purchase of insurance policies. Show that this belief is wrong. Of what does the gain to the policy-holders consist?

5. Suppose a large group of men were intending to organize a mutual life insurance company. What facts would they need to know before they could decide how much premium to charge for their policies?

6. Make up a definition for the term "insurance."

7. Fire insurance companies are constantly attempting to improve upon our devices for preventing fire. What effect have these efforts of the insurance companies upon the rates charged for fire insurance? Why?

References for further study. — Seligman, E. R. A., *Principles of Economics* (1905), pages 545-558. Ely, R. T., *Outlines of Economics*, Third Revised Edition (1916), pages 577-595. Fisher, I., *Elementary Principles of Economics* (1912), pages 427-432. Marshall, L. C. and Lyon, L. S., *American Economic Organization* (1921), pages 373-396.

## CHAPTER XXXV

### SPECULATION

**Risk of uncertain prices.** — One of the chief risks in business, as we have learned (page 353), is due to the uncertainty of future prices. If the manufacturer could know in advance just what prices he would have to pay for his materials and just what prices he could sell his product for, a good share of the risk of his business would disappear. There is a device which enables business men to escape some part of the risks of uncertain prices. This is *speculation*.

**Speculation.** — Suppose A is a manufacturer of cotton cloth. Each month he has to spend large sums of money for cotton. Each season he has large quantities of finished cotton goods for sale. His business is risky, because he cannot tell in advance the prices he will have to pay for the cotton or the prices he will receive for his product. Now suppose B comes to him and says: "I will agree to sell you all the cotton you want, so many bales a month, at such and such prices; I'll take my chances on being able to get the cotton at a little lower price than I am offering you." Here A has an opportunity to avoid the risks of uncertain prices on his cotton. He can make a contract with B and know in advance just what his cotton will cost. Many manufacturers do this. A may also find a jobber, C, who will agree to buy his products, so many yards at stated times and at definite prices. This removes the price risk at the other end; the jobber takes the risk.



**Nature of speculation.** — Let us now return to B. He is a *speculator*. *Speculation is the buying and selling of goods for the sake of a profit from changes in price.* Of course all trading profits depend partly on price changes; all trading is somewhat speculative. But the pure speculators are not traders. They do not hold merchandise and display it for sale and deliver it to buyers. Their entire business consists in judging future prices and buying and selling goods accordingly. The speculator, B, agrees to sell A 1,000 pounds of cotton, at 25 cents a pound, on May 1, it now being, let us say, January 5. B does not own any cotton when he makes this sale. On or before May 1, he will buy 1,000 pounds of cotton to deliver to A. Even then he will not handle the cotton at all. He buys the cotton from D, who has cotton stored in a warehouse. D gives him a piece of paper, called a warehouse receipt, showing that 1,000 pounds of cotton in this warehouse now belongs to B. On May 1, B turns this warehouse receipt over to A. The cotton has not been moved or handled at all. When A is ready, he will move it from the warehouse to his factory.

**Dealings in futures.** — When speculators thus sell goods to be delivered at some future time, without owning the goods at the time of the sale, they are "selling short." Speculators also make contracts buying goods to be delivered to them at some future time; this is called "buying long." All transactions of either sort are called "dealing in futures," which means buying or selling for future delivery.

The speculator makes his profit by judging correctly what future prices will be. If the speculator thinks prices will be lower at some future date than they are now, he "sells short," just as B did in our illustration. Then, if his guess proves correct, he can later buy the

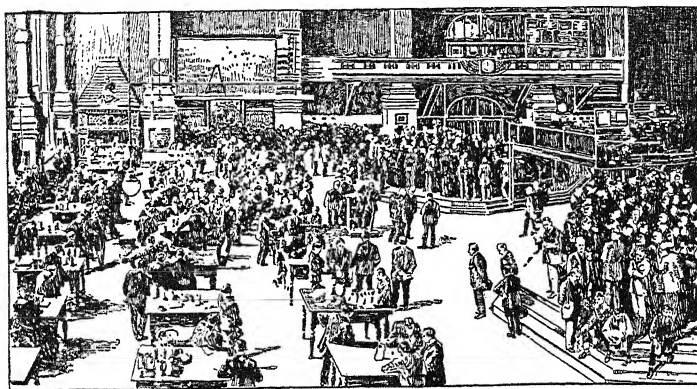
goods at a lower price, deliver them, and make his profit. If his guess proves wrong, he must buy the goods at whatever the price may be, and, if it is higher than the price at which he sold, he loses the difference.

When a speculator thinks prices are going to rise, he "buys long," that is, either he buys goods to hold for higher prices, or he contracts to have the goods delivered to him at some future time, paying the present price. If he has guessed correctly and the price goes up, he can later sell the goods at a profit. If prices should fall, he would lose.

**Professional speculators.** — There is in every important city a group of *professional speculators*, men who make it their business to judge future prices and to buy and sell goods for the sake of the profit to be made from changes in prices. These men become well informed and very shrewd at forecasting prices. Speculation is carried on in all the more important staple commodities, such as cotton, wheat, and other grains, and in the stocks and bonds of the more important corporations and in government bonds.

**The stock exchange.** — One of the greatest speculative markets is the *stock exchange*. Every large city has such a market, a place where men come together to deal in stocks and bonds. The New York Stock Exchange is the largest one in the United States and one of the most famous in the world. Here hundreds of men gather every day to buy and sell stocks. The dealing is not all speculative. There are investors, who pay their money and take the securities. Others have securities which they wish to sell at once. However, most of the business is speculative, though not all by professional speculators. Much speculating is done by "outsiders," persons who are simply "taking a chance on the market"

for the excitement of it or in the hope of making money from a lucky change in prices. This sort of speculation is mere gambling. Those who indulge in it sometimes make spectacular winnings, but in the long run nearly all of them lose. They seldom have any great knowledge of the market, whereas they are betting with professional



CHICAGO BOARD OF TRADE

Where buyers and sellers meet in the open world market for grain. The picture shows the wheat and corn pits and the sample tables where cash grain is sold. In this cash department 400,000,000 bushels of grain in elevators or on tracks for immediate delivery are bought and sold annually.

speculators, who are proficient at forecasting future prices. Naturally the odds are against the outsider.

**Other speculative markets.** — There are other speculative markets, such as the cotton exchange, the wheat exchange, and the produce exchange. The business done and the persons engaged are quite similar to those on the stock exchange.

**Judgment of speculation.** — Many people have the idea that speculation is contrary to the public interest, and there are frequent demands that the stock exchanges and

other speculative markets be abolished by law and that speculation, or dealing in futures, be forbidden. Such persons overlook some very important economic services performed by speculation. Let us see what they are.

**Speculation diminishes risk.** — In the first place, as we have already seen, speculation enables manufacturers and business men to avoid some of the risks of business. They pass the risks over to the speculators. This is an example of division of labor. The speculator, devoting his whole thought to the business, is more skillful and more successful at forecasting price changes than the manufacturer or other business man. On the other hand, the manufacturer can now devote his whole time to his own business, free from thought and worry about price changes. He is thus a more efficient and successful producer. He gains, and the public also gains, from his greater efficiency. Speculation is thus, to the business man who takes advantage of it, exactly the opposite of gambling. Instead of creating an unnecessary risk, speculation enables him to get rid of an existing risk. Were there no speculation and no speculative market, this advantage would be lost.

**Speculation equalizes prices.** — In the second place, speculation has an important and beneficial effect on prices. When prices are low, the speculators buy, in the hope of later selling at a profit. The effect is to add to the demand when prices are low and so to raise prices. When prices are high, speculators sell. By thus adding to the supply they tend to lower prices. Speculation thus has a tendency to raise prices when they are especially low and to lower them when they are especially high; that is, to equalize the fluctuation in prices. Since extreme price changes are, on the whole, harmful to the public interest, this influence of speculation is beneficial.

**Speculation creates time utilities.** — Thirdly, the speculators perform an important service by creating "time utility." When goods are abundant and cheap, the speculators buy and hold them, in the hope of selling at higher prices. Later, when prices rise on account of scarcity of goods, the speculators sell. The result is that some goods are withheld from use when they can best be spared and put back on the market when they are most needed. This is a social service. An interesting example of this sort of speculation may be found in the Bible story of Joseph's dealings in grain in Egypt. He bought and stored grain during the "seven years of plenty" and was thus able to supply the people's needs by selling during the following years of famine. It may fairly be inferred that the transaction was not unprofitable to Joseph. Yet an inestimable service was performed for the people, who would otherwise have wasted their food when it was abundant, and suffered later.

**Usefulness of the speculative market.** — Whenever there is regular and extensive speculation in any commodity or security, there will be a definite market. Anybody can always buy or sell the goods in question and it is always possible to know the exact price at any time. If there were no speculative dealings, there would often not be enough buying and selling to cause the establishment of a regular market. For example, anybody who owns government bonds and wants to sell them can sell any day and knows just what price he can get. But the owner of stocks or bonds of a corporation not "listed on the exchange" may have to search weeks for a purchaser, and he can never know in advance how much he will get. The speculative market is thus of great advantage to manufacturers, merchants, and business men in general, and to investors.

**Evils of speculation.** — Speculation is not altogether advantageous. As we have seen, many persons who speculate ignorantly or as a gamble lose their money. This is generally their own fault.

**“Corners.”** — Sometimes a few powerful speculators succeed in getting such control of the supply of some commodity or security that they can determine its price for their own advantage. Such control is called a “corner.” Speculators have thus occasionally made great fortunes at the expense of others, and this is one of the worst features of speculation. This evil is, however, generally exaggerated in the public mind. In the first place, a successful corner is a rare occurrence. There have been some famous corners, but they are few. In the second place, a corner never lasts long. It is usually a matter of a few days or weeks; then it breaks and prices go back to normal. Again, the principal losers from a corner are the other speculators, not the general public.

**Can speculators control prices contrary to demand and supply?** — It is sometimes thought that the speculators, even without a corner, can regularly control prices by means of the speculative market. It is charged that they both depress the prices to the producers and raise them to the consumers. The farmers often feel that they are not getting enough for their products, and they sometimes blame the speculative market. Cotton farmers have even demanded that the cotton exchange be abolished, and the farmers of the grain-raising states have sometimes demanded that speculative dealings in grain be forbidden by law. It is charged that prices are determined at the will of the speculators, instead of by the law of demand and supply. Such ideas as these are entirely erroneous. The most perfect working of the law of demand and supply is to be found in the specu-

lative market. Except in the rare case of a corner, it is impossible for the speculators to rig the price, for the simple reason that they are working against each other, just as buyers and sellers are always working against each other in any market. Some want prices high; others want them low. The result is market prices determined by demand and supply.

**An historical example.** — An interesting case illustrating these truths occurred during the Civil War. When the greenbacks became the regular money of the country, there was established in the city of New York a "gold exchange," a speculative market where people met daily to buy and sell gold, and where the price of gold for the whole country was determined. As the greenbacks depreciated, there were great complaints about the high price of gold, and many people charged that the speculation on the gold exchange was responsible. This was exactly the same sort of complaint that we hear from time to time now about the New York Cotton Exchange or the wheat speculation on the Chicago Board of Trade. Congress gave ear to these complaints and passed a law abolishing the gold exchange and forbidding all speculative dealings in gold. The result was immediate and disastrous. Nobody now knew where he could get gold or sell gold or what the price was. There was now no common point where all the supply and all the demand could come together and determine the price. Instead there was bargaining and higgling at various places, and widely differing prices were quoted in different places. The price, instead of falling as hoped, immediately rose higher than ever. It was 198 on the day the law was passed. The next day it was 208; the next day, 230; and in less than two weeks it had risen to 250. This was the natural result of the bidding of people who had to

have gold and who no longer knew where to get it or what was a fair price. The demand for the restoration of the exchange was so prompt and so strong that Congress repealed the law just two weeks after its passage. From that time on the gold exchange did business till the greenbacks came to par in December, 1878.

**Conclusion.** — The danger of price control by the speculators, therefore, is not great. On the whole, the evils of speculation are not serious enough to outweigh the very great advantages which speculation offers to business men, investors, and the general public. A certain amount of legal control of speculation may be advisable, but to abolish or seriously to restrict speculation would be a public calamity.

#### EXERCISES

1. Can you think of any business which does not contain an element of speculation? Give details.

2. What is meant by "dealing in futures"? What two forms does it take?

3. It is a common belief that price fluctuations are caused by the speculators. Show that this is the opposite of the truth.

4. It may be said that when the professional speculator makes a profit it is proof that he has rendered a service to society. Show that this is true, aside from the few cases when the speculator corners the market.

5. Why is it true that an amateur speculator is more likely to cause harm to society than a professional speculator?

6. What is the difference between speculation and gambling?

7. If speculation in the wheat exchange were forbidden by law, would this be a benefit or an injury to the grower of wheat? Why?

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## CHAPTER XXXVI

### THE BUSINESS CYCLE

The "ups and downs" of business. — When business men meet on the street, a common form of greeting is: "How is business?" The answer varies. Sometimes it is "Fine;" at other times, "Business is very bad." Such conversations call attention to an important feature of modern business. Business does not run along smoothly and steadily from day to day and year to year. It has its "ups and downs." At certain times, "business is good." The business man finds it easy to sell his goods, he can hardly keep up with the orders that pour in, he gets good prices, it is easy to make profits. At other times all is reversed. His goods are a drug on the market, the few sales he can make are possible only at low prices, profits decline, and losses take their place. Any business man will recognize this description of the fluctuating character of business.

Good times and depression. — Now we might expect that if every business man should report on the state of business at a given time, we should have some good reports, some bad ones, and the average of all reports would show a medium state of business, neither very good nor very bad. As a matter of fact this is not what we should generally find. If A reports his business good, B is likely to make the same report for his business, and so with C, D, and most of the others. Likewise when business is bad for some, it is likely to be bad for most.

The "ups and downs" of business are general. When "times are good," nearly all business men prosper; when "business is dull," nearly all find themselves in the same state.

**The "business cycle."**—There is a still more remarkable thing about these fluctuations of business. They come in a fairly regular succession of good times and bad times. Suppose we start at the lowest point of a period of dull business. Gradually things begin to improve. One by one, business men find their businesses looking up. After a few months, or perhaps a year or two, everybody is rejoicing in business prosperity. "Times are good;" everything is "booming." This condition lasts for a few years, frequently becoming more and more flourishing all the time. Then comes a change. Sometimes there is a gradual slowing down of business. More often there is a sudden sharp check, which we call a *panic* or a *crisis*. Business thus declines, either gradually or suddenly, and then follows a period, measured in months or even in years, of dull times, or "business depression." Then after a time the same movement will start again. This complete movement from depression to depression we call the *business cycle*. It is extraordinary how regularly business goes through such cycles. During the past hundred years, the period of the cycle has been usually about ten or eleven years. One of the most disturbing things to business men is this constantly recurring succession of good times and depression, with the frequent occurrence of crises.

**Explanation of the business cycle.**—To most people, the business cycle is a mystery. Indeed, it cannot be understood without a thorough knowledge of economic principles. In studying it we must recall what we have learned about money and prices, banking and the rate

of interest, the capitalistic nature of modern production, and the risks of modern business.

**The beginning of rising prices.** — Let us start at the low point of the cycle. Business is very dull, goods are hard to sell, prices are low, production is far below normal. This condition cannot last indefinitely. The merchants' stocks finally become exhausted. The people must have certain goods. To obtain them, slightly higher prices are offered. The merchants, in turn, offer better prices to the manufacturers, and so gradually prices begin to rise.

**Rising prices tend to spread.** — Note that when certain prices rise, the effect is to increase other prices. When retail prices rise, merchants are able to offer higher prices to the wholesalers. When manufacturers find their goods selling at higher prices, they are able to pay higher prices for materials and higher wages. When wages rise, the laborers have more money to spend, which increases demand and so raises the prices of everything they purchase.

**All prices do not rise equally.** — Notice now the effect of rising prices on business. All prices do not fluctuate with equal ease. Prices of merchandise change quickly and easily in response to changed conditions. Rents and interest rates do not change so quickly. They are generally fixed by contracts which may run for months or years before a change can be made. Salaries and wages are also slow to change. Sometimes they are fixed by contract, and, if not, then custom and habit prevent quick and wide changes. Wages seldom rise or fall so quickly or so far as commodity prices.

**Rising prices increase business profits.** — How does all this affect the business man? Here is Mr. A, a manufacturer of furniture. Prices begin to rise. He can get

more for his product. His chief costs are rent, interest, wages, and cost of materials. For some time, rent, interest, and wages will not increase. When they do, they will rise more slowly than commodity prices. The only cost that jumps up at the same rate as his income is the cost of materials. But all his selling prices are rising. So long, therefore, as prices are rising, his costs do not increase so fast or so much as his income. Extra profits thus come to the business man during a period of rising prices. When business men are all talking about the "booming good times," you may generally be sure that it is a period of rising prices.

**The spread of prosperity.** — We return now to the business cycle. Prices have begun to rise. Business men begin to see opportunities for good profits. Interest rates are low. With high profits in sight, it looks like a wise move to borrow capital, to increase business, and so get a larger share of the coming profits. The banks, glad of a chance to do more business and use their idle capital, help the business men by making loans and increasing deposits. Note that each man who expands his own business adds to the demand for other producers' goods. Mr. A, the furniture maker, decides to increase the output of his factory. He buys a big stock of lumber, he fills his coal bins, buys paint and varnish. The lumber dealers, the coal dealers, and all the others find the demand for their goods increasing. Their business picks up and, in the hope of still better business, they in turn increase their facilities and get ready for a share in the good times coming. So business is passed on all along the line. Each business man finds his business helped by the increasing business of his neighbors. Prosperity is contagious, and the period of good times is ushered in. Of course, all this increased demand for goods tends

to raise prices still more. Higher prices mean still higher profits and still further business expansion. And so the wave of prosperity rises and spreads.

**Checks to continual prosperity.** — Why do not good times last forever? We must recall what we learned in Chapter XXXIV about the risky character of modern business. Business is carried on for a general market. All this great expansion was based on the hope of future sales and future profits. And for the sake of this rosy future, capital was borrowed and tied up in business plant, equipment, and materials.

**Misjudging the future.** — Now, with thousands of business men thus guessing at future conditions, some are pretty certain to make mistakes. Business men generally exaggerate the signs of the times. When things look good, they become too optimistic; they feel that this time things are sure to go well, they can't possibly fail. So many of them picture the future even rosier than it actually turns out. Mr. A borrowed money, enlarged his factory, and started out to make a huge quantity of furniture on the assumption that he could sell all he could make at fancy prices. It turns out that he has been too optimistic. He cannot sell all his product, and the prices are not so good as he had calculated upon. So his profits dwindle, they turn into losses, and he fails.

**Costs catch up.** — Other difficulties arise. Profits were extra large because commodity prices rose faster than rent, interest, and wages. But these other things will not stay down forever. Ultimately they start rising and gradually approach the level of commodity prices. This cuts down profits, and business men who had not taken account of this may find themselves in serious trouble.

**Difficulty with loans.** — Now comes trouble in the money market. At the beginning of the rise, the banks lent freely at low interest rates. But now, with everybody seeking borrowed capital for new and greater business ventures, the banks begin to be more cautious. They are not so ready to lend, they raise their interest rates, and they call upon some of their customers to pay back their loans. Some business men, who had counted on being able to borrow indefinitely, find themselves unable to get the money they need to carry on their businesses. Caught thus in the midst of unfinished operations, they are driven into failure.

**Failures spread.** — So a few business men, here and there, fail. No one pays much attention at first. But soon the effects begin to appear. Our furniture maker, Mr. A, failed. He had ordered a great stock of lumber from Mr. B, which he is now unable to buy. But B had made all his plans on the understanding that A would take this lumber. Unable to get this money from A, B may fail. C had sold a lot of coal to A. Now A cannot pay for it. C was counting on the money to pay what he owed. Unable to get it, he also may fail. So A's failure may cause other failures. When failures once get started, each one is likely to cause others, just as the fall of the first brick in a row brings down all the others one after another.

**Bank failures.** — Suppose A, B, and C had all borrowed money from the First National Bank of their town. They cannot pay what they owe the bank. The bank, unable to collect from them, is finally unable to pay what it owes, and so the bank fails. Bank failures are even worse, in their effect on others, than the failures of individual business men. So the situation goes from bad to worse.

**Falling prices and depression.** — When A, B, and C fail they cease purchasing goods. This decreases the demand for goods, and other business men find their business declining. Moreover, other business men, seeing failures all about them, become alarmed. Everybody seeks to sell all he can and buy as little as possible, in order to get money to pay his debts and save himself from failure. So demand falls off all along the line, the supply of goods for sale increases, and prices fall. Falling prices have effects exactly the opposite of rising prices. Profits are decreased; the future looks dark to the business man. Everybody now tries to contract his business, decrease his output, and get out the best he can. Prices fall still more, laborers are discharged, there is "unemployment," merchants find the demand for their goods falling off. So at last we are back to a period of business depression, which may continue for months or even years before the upward swing commences again.

**Influence of the harvests.** — In the United States, as in all agricultural communities, the state of business is closely connected with the condition of the crops. A big harvest, with good prices, brings wealth to the farmers. They are one of the most numerous and important classes in the nation. When their incomes rise, they are able to spend more, and their increased demand raises prices and brings prosperity to business in general. Often a big harvest has been the event that has started the upward swing of business out of the slough of depression. And sometimes good crops will delay for a year or more the crisis which is due to end a period of business prosperity. Crop failures, on the other hand, hurt not only the farmers. All business suffers. Some of the worst periods of business depression in the United States have been brought about or pro-

longed by failure of the crops. All business in this country is more or less closely tied up with the prosperity or adversity of the farmers.

**Business fluctuations undesirable but inevitable.** — The business cycle, with its continual ebb and flow, its succession of good times and depression, is not a desirable thing. Not only are many business men ruined by failures, but the general public suffers through the irregular flow of production and the violent fluctuations in prices. It would be better for all if production could go on smoothly and regularly and without sudden changes in the price level. But it is doubtful if this will ever come under existing conditions. The "business cycle" seems to be a necessary result of human nature and the modern capitalistic, speculative organization of business.

**Possibility of improvement.** — It is possible, however, to diminish the violence of the fluctuations. The first remedy is to remove every obstacle to the free rise and fall of interest rates. If the rate of interest rose quickly and sharply at the beginning of the upward swing, this would tend to check the ardor of over-optimistic business men, thus putting the brakes on when they were needed. The very worst possible thing is to pass laws limiting the rate of interest, as many of our states have done. The chief opportunity to smooth out the business cycle rests with the bankers. They are in a position to restrain the too enthusiastic rush of the upward swing. By so doing they would help to make the down swing less serious, and they would also be in better position to help their customers weather the storm. The final responsibility rests upon the business men themselves. It is their ignorance and recklessness which are at the bottom of the whole thing. With removal of restrictions upon the interest rate, with better banking methods, and with



increased knowledge and caution on the part of business men, we may see the oscillations of the business cycle somewhat smoothed out. We shall probably never see them entirely removed.

#### EXERCISES

1. What is the meaning of the word "cycle"? Why is the term employed in speaking of the "ups and downs" of business?
2. Through what phase of the business cycle are we now passing in this country? Give reasons for your answer.
3. Make a list of the kinds of goods and services whose prices are slow to rise in times of rising prices.
4. From your answer to Question 3 can you tell what classes of people are injured during periods of rising prices?
5. Why are periods of rising prices called "good times"?
6. How may the interest rate be adjusted so as to prevent a general rise in prices from resulting in a crisis?
7. Give in their order the events which occur at the time of the crisis.

**References for further study.** — Fisher, I., *Elementary Principles of Economics* (1912), pages 184-191. Carver, T. N., *Principles of National Economy* (1921), pages 427-442. Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. I, pages 388-414.

## PART VII. THE ECONOMICS OF GOVERNMENT

### CHAPTER XXXVII

#### WHAT THE GOVERNMENT DOES

**Government.** — As we have learned, man is a “social being.” Men live together in society and are in close relations with each other in every department of life. Now human beings cannot thus live together in society without some kind of government. There must be rules laid down for human conduct, and there must be some authority to enforce the rules. So every community in the world has a government. In the different parts of the world we find all sorts of governments. Savage tribes are ruled by their chiefs and “medicine men.” Some peoples are ruled by despotic monarchs; others, by their own chosen leaders. The prevailing modern idea of government is *democracy*, that is, a government “of the people, by the people, and for the people.” This is the basis of the government of the United States. As described in Chapter VI, there are three grades of government in the United States: (a) national, or federal, (b) state, and (c) local. Let us now consider what the government does in connection with the production and the distribution of wealth.

(1) **Defense.** — The government protects the citizens from attack by outside foes and defends the rights and interests of its citizens against foreign nations and their

citizens. The army, the navy, and the diplomatic staff are engaged in this service. In the United States this is the business of the national government. This function of government is called *defense*.

(2) **Justice and security.** — The government maintains law and order at home, among the people themselves. It protects each citizen in his rights of personal liberty and private property. It restricts the citizen in his actions so as to prevent his infringing upon the rights of others. It enforces the contracts which the citizens make among themselves. It settles disputes among the citizens regarding their rights, and it enforces its decisions in such disputes. These various activities are performed mainly by the police, the courts, and penal institutions. They are included in what is called the function of *law and order*, or the maintenance of *justice and security*. In the United States all three grades of government have a hand in this function, but it belongs principally to the state and local governments.

(3) **Protection against disease.** — Modern governments do a great deal to protect their citizens against disease. The government regulates the treatment of contagious diseases, by means of quarantines and other measures. Through the immigration service, the United States government undertakes to prevent diseased persons entering the country. The government makes and enforces sanitary rules, regarding such things as the water supply and the disposal of sewage. It also sets up certain standards for private businesses which furnish such things as milk, butter, and meat. The sale and use of harmful drugs is regulated. Also the government maintains great hospitals for the care of the sick, and laboratories where methods of curing and preventing disease are studied. This function is called *protection*

*against disease.* All three grades of government in the United States have a part in this function.

(4) **Protection against forces of nature.** — We also look to the government for *protection against* certain destructive *forces of nature*. Thus the United States government maintains the "life-saving service" to rescue people from ships wrecked on the sea coasts and the Great Lakes. Another example is the fire department found in every American city. Again, note the levees built by the government to prevent overflow of rivers.

(5) **Education.** — One of the most important functions of government is *education*. It is regarded as the duty of the government to see that every citizen has a certain amount of education. Most of the primary education in the United States is furnished in the public schools, maintained chiefly by the local governments, counties, cities, towns, townships, and school districts. Secondary education also is principally furnished by the public high schools of the local governments. Higher education is provided in the state universities established by many, though not all, of our state governments. The people do not depend entirely upon the government for education, since there are also private schools and universities furnished by private individuals or associations. With the exception of Catholic parochial schools, private enterprise does not do very much in primary education, but there are a great many private secondary schools and academies. A still more important part is taken by private enterprise in higher education. Many of the greatest colleges and universities in the land are private institutions; i.e., not furnished by the government. The furnishing of primary and secondary education is the most important function of our local governments. Higher education is furnished, if at all, by the state

governments and a very few city governments. The national government has comparatively little to do with education.

(6) **Care of dependents and defectives.** — Another important function of the government is to care for those members of the community who are unable to provide for themselves. The poor, the sick, the crippled, the blind, and the insane are found in every community. Among primitive and savage men, little care was given to such members of the tribe. They were left to die or were even put to death by order of the chief. Modern civilized peoples will not permit misery and death to go on without making efforts for relief. Some of the poor, the sick, and the defectives are cared for by members of their own families. Others are provided for by private charity. But a large part of this task is left to the government. Poorhouses, hospitals for the sick and for the insane, and other institutions must therefore be provided. This function of government is called the *care of dependents and defectives*.

(7) **Facilities for private industry.** — Another service of the government is the furnishing of certain important facilities for private business. Thus, as we have learned in Chapters XXII to XXVII of this book, it is the government that provides the monetary system. The government also has general oversight over the banking system. The government specifies a system of weights and measures and sees that the citizens conform to it. The government provides the machinery for granting and protecting patents and copyrights. Through the consular service, the government does much to assist our citizens engaged in foreign trade. The government gives important aid to shipping by maintaining lighthouses along the coast, by dredging channels in rivers and

harbors and marking them with buoys, by making surveys and providing maps and charts. By agricultural experiment stations and other means, the government aids the farmers with information concerning superior plants and animals and improved methods. These and similar services are provided in the United States, some by the national government, others by the states. On the other hand, the local governments perform the very important service of furnishing most of the highways, streets, roads, and bridges, although some are provided by the states.

(8) **Regulation of private industry.** — In Chapter XX we saw that some business enterprises tend to gain monopolistic power, and that when this happens it becomes necessary for the government to take a hand and regulate the business. Ordinarily we can safely depend on competition to guarantee the public good quality and fair prices. But when competition breaks down and monopoly comes in, the government has to protect the consumers. For example, the Interstate Commerce Commission and the various state public service commissions have been created to secure the public fair treatment by the railroads and other public utilities. There are other businesses which are not necessarily monopolistic, but which are so complicated and so little understood that it would be an easy matter for an unscrupulous business man or corporation to defraud the public. For example, banking and insurance are of this kind. Therefore the states regulate such business by bank commissions, insurance commissions, and the like. This function of government may be called the *regulation of private industry*.

**Primary government functions.** — The eight functions which have been studied so far are ones which it is

generally recognized must be performed by the government. Hardly any one would consider for a moment the proposition to go back to the primitive condition in which each man had to go armed to protect himself, his family, and his property from attack by foreigners or by his neighbors, and in which disputes were settled by violence. There is no effective way of preventing disease except through the action of the government. The same is true of the life-saving service and fire protection. If we are to have universal education, it must be provided by the government, since most parents could not pay the cost of sending their children to private schools. The care of dependents and defectives could perhaps all be provided by private individuals, but it would not be so well done and the cost would be greater. The facilities which the government furnishes for industry, also, could be provided by private enterprise, but experience has clearly taught the superiority of the government service. Of course when regulation of private industry becomes necessary, the government is the only agency that can undertake it. These eight functions are therefore peculiarly and admittedly the business of the government. We shall call them the *primary government functions*.

(9) *Government industries*. — In addition to these functions, however, governments often take a direct part in production by engaging in certain *productive enterprises*, which in many, if not all, cases could be conducted by private business men and corporations. Foremost among these *government industries* comes the post office. Many European governments own and operate also the railroad systems, the express business, and the telephone and telegraph services. Local governments sometimes engage in the businesses of furnishing water, gas, and electricity. There are some municipal street railway

systems. There are government forests in the United States and other countries. The subject of government industry will be studied more fully in a later chapter (Chapter XLII).

**Economic character of government functions.** — These chief functions of modern government show what an important part the government plays in economics. Most of them are of importance in the production of wealth. For example, production cannot go on successfully unless there is peace and security and law and order. Disease is clearly enough an enemy of production. In combating disease, the government takes a real part in the production of wealth. Education trains boys and girls, young men and women, to be more intelligent and efficient producers. This is true of all education, not merely of trade or manual or business education. The facilities for private industry furnished by the government are of course aids to production. And when the government itself goes into industrial enterprise, it is engaging directly in production.

Protecting wealth from destruction by fire or flood is just as much production as creating the wealth in the first place. The government performs an economic service when it regulates private industry, when it cares for the poor and defective, or when it saves the life of a shipwrecked sailor. In these, and other similar functions, the government is also taking a hand in the distribution of wealth among the citizens. There is, in fact, no activity of government that does not have an important economic character.

#### EXERCISES

1. Name some important services performed for you during the past day (1) by the government of the United States, (2) by the



government of your state, (3) by your city, town, or county government.

2. How would the daily lives of people in your neighborhood be different (1) if there were no courts, (2) no state militia, (3) no police department, (4) no jails or prisons, (5) no almshouse or poor farms, (6) no government care of public health, (7) no United States post office, (8) no public schools?

3. In what ways is your own personal liberty interfered with by the government? Would you be better off if such government interference were given up? Why?

4. What important difference is there between the city water-works system and the city police department?

5. Is a gunner on a battleship a productive laborer? Explain.

**References for further study.** — Johnson, A. S., *Introduction to Economics*, Revised (1922), pages 448-469. Mill, J. S., *Principles of Political Economy*, Book V, Chapters I, VIII-XI. Dunn, A. W., *The Community and the Citizen* (1914), (see Table of Contents).

## CHAPTER XXXVIII

### PUBLIC FINANCE

**Government expenditures.** — The performance of government services imposes heavy costs, no less than if they were performed by private business men or corporations. For example, our national government needs arms and ammunition, food and other supplies, for the army and navy. It has to make or buy expensive battleships. It has to pay large sums in salaries and wages to a multitude of government employees. It has expensive buildings, which must be built, repaired, heated, and cared for. So also the state and local governments have heavy expenses for buildings, supplies, and wages. Anything that the government (national, state, and local) does costs money. These costs of government functions are called *government expenditures*.

**The cost of government.** — Government is a very expensive thing. The total cost of government (national, state, and local) in the United States in 1913, the year before the World War, was about three billion dollars. Of this amount, about one third (a little less than a billion dollars) was spent by the national government. The states spent about one eighth of the total (a little less than four hundred million dollars) while the rest, more than half of the total (about a billion and two thirds), was spent by the local governments, — cities, counties, towns, etc. In the year 1919, the first year after the war ended, state expenditures were half as

great again as in 1913 (over six hundred millions); local expenditures had increased to two and a quarter billions; and the expenditures of the national government, still swollen by war costs, were between fifteen and sixteen billions. Since then the expenditures of the national government have dropped to about four billion dollars a year. State and local expenditures, on the other hand, have been steadily increasing. The total cost of government in the United States is now about nine billion dollars a year, three times what it was before the war. It has been estimated that the total of the annual incomes of the people of the United States is in the neighborhood of sixty billion dollars. The expenditures of government, therefore, take about fifteen per cent (more than one seventh) of the total income of the people. In other words, the average American citizen works more than a month and a half out of each year just to pay his share of the cost of government. Government is one of the most expensive of the necessities of life.

**Principal items of government expenditures.** — The largest expenditure of the United States national government is for defense. In time of peace, the government's expenditure for the army and the navy, pensions to war veterans, and interest on debt due to past wars, have averaged about two thirds of all its expenditure. Of course the cost of actual warfare is enormous. The Civil War cost the United States government three billion dollars during the four years of war. At that time the annual cost of running the national government on a peace basis was about sixty million dollars. The World War cost the United States government more than thirty billion dollars (including loans to the Allies). Some of the other nations spent more than this, and it

has been calculated that the expenditure of all the nations engaged in the World War was over two hundred billion dollars. Both in time of peace and during actual warfare, expenditure for defense is the principal item in the cost of every important national government in the world. If the nations should ever come to an understanding that would lead to disarmament, one result would be the possibility of cutting in half the cost of government of every important nation.

Among other important expenses of our national government, we find work on rivers and harbors, Panama Canal and other public works, facilities for national industry, maintenance of justice and security, regulation of private business, care of the Indians, sanitary regulations, immigration and naturalization service, and the expense of Congress and the other departments of the government. Actually the biggest item next to defense is the cost of running the post office. But this item is not usually included in statements of the expenditure of the government, since the post office is a business enterprise, whose revenue nearly equals its cost. The cost of the post office in the fiscal year 1921 was \$597,535,263. We shall study the United States post office in the chapter on government industry (Chapter XLII).

Education is the chief item of expenditure of the state and local governments; it amounts to about one fifth of the total. For the states the items of next importance are the care of dependents and defectives, and the maintenance of justice and security. Highway expenditure is also heavy. In the counties, highway expenditure is nearly as great as that for education; then come care of dependents and defectives, and maintenance of justice and security. In the cities and towns, the chief expend-

itures, after education, are for justice and security, highways, and protection against disease. For both state and local governments, as well as the national government, interest on public debts is a heavy item.

**Government income.** — To meet their heavy expenditures, governments must have equally large incomes. Where do governments get the money to pay their expenses? There are just three important sources of government income: (1) industrial earnings, (2) taxes, and (3) fees and assessments.

**Industrial earnings.** — As we have seen (page 386) governments sometimes engage in productive enterprises. Examples are the post office and city water systems. When the government goes into business, it sells its product or service to the consuming public just as any private enterprise does. This brings in an income, in the form of *industrial earnings*. The income from a government industry is seldom more than enough to pay the cost of the industry. Such income is therefore not available to pay the costs of the primary functions of government which we have been studying. We shall therefore postpone the further study of industrial earnings till we come to the chapter on government industry.

**Industrial earnings and other government income compared.** — When the government engages in industrial enterprise it offers to the citizen certain services or commodities, which he may take or not as he chooses. If he wishes the service, he pays the government's price; otherwise he pays nothing. Thus the citizen may use the government post office or not, as he sees fit. If he does not care to send any letters or parcels, he pays nothing for the support of the post office. There is no compulsion. The situation is the same as in private business.

It is quite different with the other primary functions of government and the other forms of government income. Take, for example, the public school system. The government does not sell education, the way it sells postal service. The citizen is not free to "take it or leave it." The law requires him to have his children educated, either in a private school or in the public school. And every citizen is compelled to pay for the support of the public schools, whether he uses them or not. A may have one child in the public school; B may have ten. This has nothing whatever to do with the amount they must pay the government for the cost of education. C may send all his children to a private school, and D may have no children at all. They have to pay for the support of the government schools just the same.

**Government services generally for common benefit.** — This example will illustrate the character of government functions in general. The primary services which the government performs are for the benefit of the people as a whole, not for the benefit of particular persons. So in raising the money to pay the cost of government service, the burden is distributed among the whole people according to certain rules, but with no attempt to collect from each citizen in proportion to the benefit he has received. Returning to the example of education, we find that the government provides the public school system, not for the sake of benefiting those persons who want to have their children educated, but because the whole people will be better off if everybody has an education, or because we believe that a prosperous and happy democracy is possible only when all the people have some education. So the army and navy exist to give the general benefit of defense to the whole nation, not

to sell protection to individuals. The courts and the police give the benefits of justice and security to the whole public. No attempt is made to have each citizen pay for the particular benefit he receives.

**Impossible to make citizens pay according to benefit received.** — Indeed, to make each citizen pay according to the benefit he received would be quite impossible. How could we tell how much the services of the American army and navy are worth to Mr. A, a peaceful, law-abiding grocer in a small town in the Mississippi valley? He enjoys, like all of us, the general benefit of a nation protected from foreign attack. But no one could possibly calculate his individual share of the benefit. On the other hand, Mr. B, traveling in the wilds of Africa, is captured and about to be killed by savages. The United States sends a battleship and a company of marines and rescues him, at a cost of \$100,000. How can any one tell what the service was worth to Mr. B? And, if one could tell, how could the government make him pay, supposing he was not a wealthy man? The government must give its services to all alike, rich and poor. It cannot go on the principle of furnishing the benefits of government only to those who are rich enough to pay for them.

**Compulsory payment.** — Since the government renders its services for the common benefit of the people as a whole, it follows that everybody who is able must be required to pay something to defray the cost of government. No one can be permitted to escape payment on the ground that he gets no benefit from the government, or to get off with a small payment because he claims he has received only a small benefit. Everybody must be compelled to pay according to some equitable and workable rule. What this rule is we shall learn in the next chapter.

**Definition of tax.** — We now have before us the two main characteristics of *taxation*: (1) compulsion and (2) payment without reference to individual benefit. And a tax may be defined as follows: *A tax is a compulsory payment from a person to the government to pay the cost of services performed for the common benefit, without reference to individual benefit.* The primary functions of government are almost entirely performed for the common benefit, and all modern governments get the bulk of their income from taxation.

**Fees.** — Although, as just stated, the government performs its services primarily for the common benefit, incidentally it sometimes gives special benefits to certain persons. For example, the government grants patents in order to promote inventions for the benefit of the whole people. But in so doing it necessarily gives a particular benefit to the person who receives the patent. In such cases, the government may make a special charge on account of the benefit received. Such a payment is called a *fee*. Again, the government often finds it necessary, for the common good, to regulate certain occupations of the citizens. For example, it has been found necessary to license the drivers of automobiles. In such cases the government may require of the individual a special payment on account of the cost of the regulation. Such a payment, as for an automobile operator's license, is also a *fee*. *A fee is a payment by a person to the government on account of a special benefit received from the government, or a special cost imposed upon the government, in connection with a government service performed for the common benefit.*

**Special assessment.** — *A special assessment is a particular kind of fee, imposed when the special benefit consists in an improvement to property.* Thus, a city decides to



pave a certain street. This is done for the benefit of the people of the whole city. But it raises the value of the land along that particular street. The city will then collect a special assessment from the owners so benefited.

**Fees, taxes, and industrial earnings compared.** — Fees are like taxes in that they are generally compulsory. The automobilist has to take out a license whether he wants to or not. If the city votes a new pavement, the landowner has no escape from the special assessment. On the other hand, fees are like industrial earnings in that they are paid on account of individual benefits or individual costs. Fees, therefore, stand between taxes and industrial earnings. Only a comparatively small part of the cost of running the government is raised by fees and assessments.

**The budget.** — We often hear it said that "a man must live within his income." The careful man keeps some account of his income and his expenditures, and once a year or so he looks back over his last year's accounts and makes an estimate of his probable income for the next year, on the basis of which he decides about what his scale of expenditures for the next year can be. This calculation and estimate is called a *budget*. A well-managed government finds it necessary to make a *budget* each year; i.e., *a statement of the income and expenditures of the past year and an estimate of the income and expenditures of the next year*. The government differs from the individual, however, in that it has the power of taxation and so can control the amount of its future income much more than the ordinary individual finds possible. The individual estimates his future income and then has to plan his expenditures to fit. The government is more likely to do the opposite; first decide what expenditures it shall incur and then impose taxes to raise the necessary income.

**Neglect of the budget in the United States.** — No government can manage its finances well without a carefully made budget. This is one thing which has not been well done in the United States. European governments are generally quite careful about their budgets. The budget of the British Parliament is a model. But our national government has only recently had anything that really deserves the name of a budget, and most of our state and local governments have done little better. As a result, there has been great confusion as to what our government was costing. It is hard to tell whether any particular expenditure is worth while. It has been almost impossible to check waste and extravagance. Our estimates of future income and expenditures are little better than guesswork, and our income and expenditures seldom balance as they should. One of the most pressing problems in American public finance is the improvement of our government budgets.

**Government borrowing.** — When a government's income is less than its expenditures, it has what is called a *deficit* and must *borrow*. A government may borrow for various reasons.

(1) **To meet a current deficit.** — It may borrow to make up a deficit in ordinary running expenses due to the failure to provide income enough to meet the costs of running the government. All grades of government, national, state, and local, frequently find it necessary to borrow for this purpose, especially in the United States.

(2) **Emergency borrowing: war.** — A government may borrow to meet an emergency, such as a war. No government is able to pay for a great war out of its ordinary sources of income. War always causes large government loans. Nearly the entire cost of the American Revolution was obtained by means of loans. The Civil War cost the

national government, as we have seen, about three billion dollars. Four fifths of this sum was borrowed; the other fifth was raised by taxation. The United States borrowed about twenty-four billion dollars on account of the World War, or about three fourths of its cost. The rest came from taxation. The World War cost Great Britain about forty-two billion dollars, of which she obtained about thirty-six billions from loans, the rest from taxation. As a rule it is only national governments that have to borrow large sums for war or other emergencies.

(3) **Borrowing for investment or public works.**— Governments sometimes borrow for investment. When a government engages in an industrial enterprise it generally has to borrow the necessary capital. Thus, the Prussian government borrowed the money to purchase the railroads when it was decided to have them owned by the state. The United States government borrowed in order to dig the Panama Canal. American cities sometimes issue bonds in order to establish municipal waterworks systems. The state of New York has borrowed large sums in order to enlarge and improve the Erie Canal. Governments also frequently borrow in order to construct public works needed in carrying out their primary functions. Capital is borrowed to construct roads, and to build schoolhouses and other public buildings. By means of borrowing, the people are enabled to have the use of the public work at once and pay for it gradually out of the taxes of the following years.

**Character of government debts.**— Government borrowing is in most respects similar to the borrowing of private business men and corporations. Here the government has no power of compulsion. People cannot

be forced to lend. The government must make its interest rate and other terms attractive enough so that the citizens or foreigners will be willing to lend it their capital. Government bonds, however, especially those of strong national governments, are generally considered an especially good investment. This is shown by the fact that governments can generally borrow at lower rates of interest than are paid by ordinary commercial borrowers. There are several reasons for this. In the first place, the life of the government is not limited like the lives of individuals. Again, the repayment of a government loan does not depend on the success of any particular business venture. Individuals and corporations generally borrow to engage in business. If the business fails they are often unable to pay their debts. Not so with the government. The government's ability to pay its debts rests upon its taxing power. Even though it fails in an industrial undertaking or suffers other loss, the government can still call upon the taxpayers for the money needed to pay its debts. Most governments are very scrupulous about meeting their obligations. It is realized that only in this way can the government keep its credit good against future need. The result is that government bonds are generally considered the safest of all investments, and most governments can borrow on easy terms.

**Dangers of government borrowing.** — There is a danger in public borrowing. People do not like to pay taxes. Borrowing is easy and not so unpopular. The officers of government are tempted to borrow instead of collecting taxes. They are likely to spend government money more lavishly and recklessly than if it came from taxation. Thus the government debt piles up and the taxpayers are burdened with heavy payments for interest with

perhaps not very much to show for it in services rendered by the government. The rapid growth of public debts during the past generation is one of the most important and alarming phases of public finance.

**Magnitude of modern public debts.** — Most of the national governments of the world have huge debts as the result of past wars. The United States borrowed to pay for the Revolution and the War of 1812, but by 1836 the entire national debt had been paid off. The Civil War brought the debt to almost three billion dollars. This had been reduced to about a billion and a quarter before the World War. That war brought it up to about twenty-five billions. Before the war the annual interest paid by the United States government was twenty-three million dollars. Since the war it has been nearly a billion dollars, just about equal to the entire cost of running the government before the war. The United States is better off than most other governments. Great Britain's debt was three and a half billion dollars before the war and thirty-five billions at its close. The war increased the French national debt from six and a half billion dollars to over twenty-six billions. The debt of the German Empire rose from one and a quarter billion dollars to about thirty-five billions. State and local governments have also increased their public debts very rapidly in recent years. The state of New York has a funded debt of more than two hundred and fifty million dollars; the bonded debt of the city of New York is about a billion and a quarter dollars. The American cities have been so ready to borrow, that many states have enacted laws limiting the borrowing powers of their cities.

Indeed, the unprecedented borrowing of the World War has very materially impaired the high standing of

government debts referred to earlier in this chapter (page 399). As the result of budget deficits, enormous borrowing, and reckless issue of paper money, several of the belligerent nations, such as Russia, Germany, Austria, Italy, and others, have seriously weakened their public credit. Their national debts have depreciated far below par, and in many cases failure and repudiation of at least part of the public debt appears the only possible outcome. The credit of the French government also suffered, though not so seriously. In Great Britain and the United States the public credit came through without serious injury.

#### EXERCISES

1. Name half a dozen of the most important of the necessities of life. How does government compare with these as regards cost?
2. Compare the expenditures of (1) the United States national government, (2) your own state government, and (3) your own city, town, or county.
3. What are the chief differences between a public high school and a private preparatory school?
4. Why is a man who has no children compelled to pay to support the public schools?
5. What is the difference between a tax and a fee? In what ways are they similar?
6. What are the main differences between government borrowing and the borrowing of individuals and corporations?
7. Does borrowing by the government reduce the cost of government to the people? Explain.
8. How was public credit affected by the World War?

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## CHAPTER XXXIX

### TAXATION: GENERAL PRINCIPLES. INCOME AND PROPERTY TAXES

How is the tax burden distributed? — We have seen that most government services are performed for the common benefit of all, and that all persons are therefore compelled to pay taxes for the support of the government, without regard to the particular benefits received by each. We must now study the basis on which taxes are distributed: what is the rule that determines how much each person shall pay?

**Equal distribution.** — When an athletic club or a debating society is formed, the expenses are usually divided equally among the members. All pay the same "dues." Suppose we should distribute the costs of government in this way. We have seen that the total government expenditure in the United States is about nine billion dollars. The population of the United States is about one hundred and ten millions. Each person's share would therefore be over \$80 a year. A family of five (father, mother, and three children) would pay about \$400. If the man's salary or wages were from \$1,000 to \$1,200 his taxes would be one third or more of his year's income. Another family of five, with an income of \$12,000, would pay only one thirtieth of their income, and the very wealthy would scarcely feel their tax payments at all. Of course there are many poor people from whom it would be impossible to collect \$80. Every-

body agrees that the equal distribution of taxes would not do, that it would be extremely unfair to put so heavy a burden on the poor man and to collect so little from the well-to-do and rich, who could easily pay more. But if the burden is not to be divided equally, on what basis shall it be distributed? We learned in the last chapter that it would be impossible to make people pay in proportion to the individual benefits received. Payment according to the cost of the service to each individual would be equally unworkable.

**Taxation according to ability to pay.** — In modern democratic governments the answer is: *distribution according to ability to pay*. The poor pay less than the rich, because they are less able to pay. The greater a man's wealth, the greater is his ability to contribute to the support of government. The whole cost of government is to be distributed among the people in proportion to their respective abilities to pay.

**Proportional taxation illustrated.** — Tax-paying ability is generally measured by the possession of wealth (or property) or the receipt of income. Two illustrations will make this clear. Suppose a tax of 1% is imposed upon each person's property. A, having property worth \$1,000, pays a tax of \$10. B's property is worth \$50,000: his tax is \$500. Each pays in proportion to his wealth. Or suppose an income tax of 5% is imposed. If A's income is \$700, his tax is \$35. B, with an income of \$7,000, pays \$350. Each pays in proportion to his income. Note that the *rate* of the tax, 1% on property or 5% on income, is the same for all taxpayers. Such a distribution, by means of a *uniform rate*, is called *proportional taxation*.

**Progressive taxation.** — It is generally believed that even proportional taxation is unjust. It is believed that



B (in the example given), with an income ten times as great as A's, is able to pay more than ten times as much in taxes; in other words, that ability to pay taxes increases at a faster rate than the income or wealth. If this is true, proportional taxation takes too much from the poor and too little from the rich, and the rule should be *progressive taxation*, according to which *the rate of the tax increases as the amount of the property or income increases*.

**An example.** — For example, the rates of a progressive income tax might be like this:

On the first \$1,000 of income, 1%						
On the part of the income from						
\$1,000	to	\$	2,000,	2%		
"	"	"	"	"	2,000	to 5,000, 3%
"	"	"	"	"	"	5,000 to 10,000, 4%
"	"	"	"	"	"	10,000 to 20,000, 5%
"	"	"	"	"	"	20,000 to 50,000, 6%
"	"	"	"	"	over	50,000, 7%

Now A, with an income of \$700, will pay a tax of 1%; i.e., \$7. B, having an income of \$7,000, will pay a tax made up of these amounts: 1% of \$1,000, or \$10; 2% of the next \$1,000, or \$20; 3% of the next \$3,000, or \$90; and 4% of the last \$2,000, or \$80; making his entire tax \$200. Though B's income is only 10 times that of A, his tax is nearly 30 times A's. C, with an income of \$14,000, would pay a tax of \$520. His income is 20 times that of A; his tax is 74 times as much. This is the result of progressive taxation. The greater the taxpayer's income, the higher is the rate of his tax.

**Various kinds of taxes.** — Modern governments use several different kinds of taxes, the most important of which are (1) the income tax, (2) the property tax, (3) the inheritance tax, (4) the poll tax, (5) various kinds of business taxes, (6) excises, and (7) customs.

**Income tax.** — The *income tax* is the principal tax in several of the most important countries of the world, such as the United States, Great Britain, and Germany. In the United States it is used by the national government and also by several of the most important states, such as New York, Massachusetts, and Wisconsin.

**Income taxes in the United States.** — The United States federal income tax is imposed both upon residents and upon nonresidents who receive incomes from within the United States. The tax is imposed upon the individual's "net income," which is found by deducting from his total income the expenses necessary to obtaining that income and a few other items. Note that this is a different meaning of the term "net income" from that used in this book (see Chapter V). A certain amount of net income of every taxpayer is exempt, this exemption being greater for married than for single persons. There is also a certain exemption for each minor child or dependent person supported by the taxpayer. These are called *personal exemptions*. The rates of the tax are progressive.<sup>1</sup> Corporations are taxed separately on their net income.<sup>2</sup> Individuals therefore are not required to pay the normal tax on dividends from corporations. Every year each individual and each corporation is required to fill out for the government a return stating all the necessary facts

<sup>1</sup> In the law of 1921, the personal exemptions are as follows: \$1,000 for an unmarried person and \$2,000 for a married person, except that a married person with a net income of less than \$5,000 has an exemption of \$2,500; husband and wife can have only one exemption of \$2,000 or \$2,500 between them; the exemption for each minor child or dependent is \$400. The tax consists of a "normal tax" and a "surtax." The rate of the normal tax is 4% on the first \$4,000 of net income above the exemption and 8% on all income above that. The surtax is imposed on all net income above \$5,000, at progressive rates running from 1% to 50%.

<sup>2</sup> The rate under the 1921 law is 12½%.

about his income. There are heavy penalties for failure to make the return or for making a false return. The income taxes of the states are similar to the federal tax. The rates are generally progressive but not nearly so high as in the federal tax. The federal income tax yields about two billion dollars a year. The New York state income tax yields about thirty millions; the Wisconsin tax about seven millions, each year.

**Advantages of the income tax.** — The great advantages of the income tax are (1) that income is the best measure of tax-paying ability, (2) that the principle of progressive taxation is more easily applied than to any other tax, (3) that each citizen feels that he is contributing directly to the support of the government, and (4) that, by raising and lowering the rates, the government can control the yield of the tax to make it fit the government's needs; i.e., the income tax is *elastic*.

**Property tax.** — The property tax is a tax based upon the value of the taxpayer's property or wealth. Taxes upon certain kinds of wealth, such as land and buildings, are common throughout the world. In the United States what is known as the *general property tax* is used by many of the states and practically all the local governments. It is the most important source of income of the local governments (counties, cities, towns, etc.). The federal government does not use the property tax.

**Typical plan of American general property tax.** — The general property tax in the United States is administered by town and city officers in some states, in other states by county officers. There is generally more or less supervision by the state. No two states have exactly the same system, but the general plan is much the same everywhere. The following account will show the typical plan of the general property tax, in those states where

it is administered by the towns. With few changes this description will also hold of the states that have county administration. The *tax assessors* of each town make up a list of all persons residing in the town, with the total value of each person's property opposite his name. This is the town tax list. Sometimes the taxpayer is required to hand in a list of his property; in other states the assessors make out the lists themselves. The process of preparing the list of property is called *assessment*. The next step is to determine the town *tax rate*. The town officers decide how much income is needed from the property tax and fix a rate which will yield that amount. The property tax is thus a proportional tax, not progressive. For example, suppose the tax list of a certain town amounts to \$850,000, and suppose it is decided to raise \$10,200 from the property tax. 10,200 divided by 850,000 gives .012, or 1.2% as the necessary tax rate. Tax rates are generally stated as so many mills on the dollar. This rate would be called 12 mills, rather than 1.2%. Now it is evident that if every taxpayer pays 12 mills on each dollar of his assessed property (or 1.2%), all the taxpayers will pay 1.2% of \$850,000, which is \$10,200, the amount which was to be raised. Having made the assessment and fixed the tax rate, it is a simple matter to determine the tax due from each person. The final step is the *collection* of this amount from each taxpayer.

**Town, county, and state taxes.** — The counties also generally depend on the property tax. Each town in the county reports the total of its tax list to the county officers. The total of all these lists is the *county list*. The county officers determine the rate which will raise the necessary amount for the county, in the same manner as in the towns; this is the *county rate*. Collection follows.

Some of the states obtain part of their income from the general property tax. The method is the same as for the counties. The state list is made by combining the county lists, the necessary rate is determined, and collection is made. The taxpayer has to pay generally two, sometimes three taxes, though they are often combined and collected at the same time. In some states the original assessment is performed by county officers; the amount raised is then distributed between the county and the several towns or townships. There are many other variations in detail among the various states, which need not be studied here.

**Poor assessment.** — The American general property tax works very badly. The chief difficulty is with the assessment. Some kinds of wealth are easy to discover and fairly easy to value; for example, land and buildings. But property in the form of stocks, bonds, notes, money, and bank deposits is hard to discover. If the taxpayer wishes to conceal such property, it is generally impossible for the assessor to discover it. And since concealment is so easy and safe, the temptation is too strong for most taxpayers. Other kinds of wealth, such as household furniture, books and pictures, jewelry and clothing, are seldom assessed; the taxpayer does not declare them and the assessor cannot discover and value them without a house-to-house search, which is rarely attempted.

**Real estate and personal property.** — All property is divided into two classes: (1) land and buildings and permanent improvements upon the land, called *real estate*, and (2) all other property, called *personal property* or *personalty*. The assessment of personal property is a complete farce. Not more than one fifth of the total value of personal property ever gets on the tax lists. Even real estate is poorly assessed. Probably not one

half the value of real estate throughout the country is on the tax lists.

**Underassessment.** — Part of the evasion of the general property tax is due to intentional underassessment. The assessor is generally an elected officer, chosen by the votes of the taxpayers. Nobody likes to pay taxes, and the assessor has an unpopular job. If he is too strict he is likely to be defeated at the next election. He finds he can please people by putting their property down at less than its real value. Of course if he treated everybody alike, the result would not be changed. There would simply be a higher tax rate. But, once underassessment begins, it is certain that all will not be treated alike. The most scandalous inequality is the result. To correct such injustice there is in each town or county a board, generally called the *board of relief*, to hear complaints and revise unjust assessments. But little good is done by these boards.

**Special motive for underassessment.** — When county and state share in the general property tax, there is another strong inducement to underassessment. Since the county tax, for example, is based on the tax lists of the towns, any town which turns in a small list thereby gets off with a lighter county tax. Suppose the tax list of town A is \$1,000,000 and its tax rate 10 mills. If next year all property is put in at half the former value and the tax rate is raised to 20 mills, the town taxes will be unchanged. But the county tax of each citizen will be nearly cut in half. Hence there is a deplorable race among the various towns and counties to keep their lists low. There are county and state *boards of equalization*, the business of which is to correct such abuses, but they are able to accomplish very little.

**High tax rates.** — One result of the general evasion

and underassessment is that the tax rates are very high. Of course, the smaller the amount of property taxed, the higher is the rate necessary to raise the required amount of revenue. If all the taxable property in the United States were assessed at its true value, the average tax rate would probably not need to be over 4 or 5 mills. Actually the average is well over 10 mills, 20 mills is a common rate, and rates of 30 mills or even higher are not uncommon. With such high rates as this, it would be ruinous for any taxpayer to have his property assessed at its true value. This, in turn, is one of the great causes of evasion of the personal property tax. Remember that the law requires that all property be assessed at its full value. In the case of land and buildings it is possible for the owner or assessor to put down a low figure and make a pretense that this represents his judgment of the real value. But in case of a note or mortgage, a bond, or even a share of stock, the value is generally either perfectly evident or easily ascertainable. It is not possible to undervalue such property without open violation of the law. But a 30-mill tax on a 4% bond would take three quarters of the entire income from the bond. This is ruinous, and since this is the kind of property that is most easily concealed, people generally will evade the tax. Thus evasion causes high tax rates, and high tax rates cause evasion. This is what is called a "vicious circle" of cause and effect.

**Reform of the general property tax.** — Innumerable attempts have been made to strengthen the general property tax. Heavy penalties are provided for violation of the law. Extraordinary powers are granted the taxing official or officials. Yet the situation has grown steadily worse. The only real remedy is to give up the idea of the general property tax. A property tax upon only such kinds of

property as can be efficiently and honestly assessed, i.e., on real estate and a few simple forms of personal property, should be kept. The taxation of personal property generally should be given up. This is what has happened in practically every important country except the United States. The income tax and other taxes should be relied on to reach the tax-paying ability of the owners of personal property. In recent years, some of the most important states, such as New York, Connecticut, Massachusetts, Wisconsin, etc., have been taking steps in this direction, and improvement is beginning to come.

### EXERCISES

1. Why should not all share alike in bearing the costs of government?
2. If A's income is \$4,000 and B's income is \$60,000, and A's tax is \$60 and B's, \$900, what kind of tax is it? What would it be if B's tax were \$1,000? \$700?
3. Why is the income tax so widely used by modern nations?
4. Explain how a town can reduce its share of the county tax on property without reducing its own revenue.
5. Would the general property tax work any better if the assessment were made by state officers? Why?
6. If a town should reduce its tax rate by half, would the revenue from the general property tax be also reduced by half? Explain.
7. Why would a tax on a few kinds of wealth work better than the general property tax?

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## CHAPTER XL

### OTHER KINDS OF TAXES. DIRECT AND INDIRECT TAXATION

**Inheritance tax.** — The *inheritance tax* is an important form of government income in modern times. It is used by national and state governments all over the world. Most of the states of the United States use it. Our national government has generally used it only in time of war, but the inheritance tax imposed during the World War is still in force. Our local governments do not use the inheritance tax.

**Typical plan of the inheritance tax.** — These are the important features of the typical inheritance tax: Usually a certain amount of property is exempt. Above that the tax is imposed at rates which are usually doubly progressive. (1) The rate increases as the relationship between the decedent and the *heirs* or *beneficiaries* becomes more remote. Thus property left to husband or wife, children or parents, pays a low rate or none. That which is left to cousins or uncles, pays more. Still higher rates are imposed on property left to more remote relatives or to persons who are not related at all or to corporations. (2) The rate in each of these classes increases with the value of the property. Thus we have a double progression, intended to carry out the principle of taxation according to ability to pay. The rates vary in the different states, going all the way from less than 1% on small bequests to direct heirs up to 15% or more on large bequests to strangers or corporations. The

United States inheritance tax is progressive with respect to the amount of the estate only. The rates are from 1% on the first \$50,000 or less up to 25% on any amount in excess of \$10,000,000. Of course every estate must pay both the United States tax and the tax imposed by its own state. It will be seen that the combined inheritance tax may amount to a very considerable part of the bequest in some cases. The United States and some of the larger and wealthier states receive large incomes from the inheritance tax.

**Poll tax.** — The *poll tax* is used by many of the states and local governments in this country. It is a uniform tax (generally only two or three dollars) imposed upon everybody, regardless of his wealth or income. In some states it is imposed on men and women, in others on men only. Sometimes it is imposed only on persons qualified to vote. Of course the poll tax has no regard to the principle of ability to pay. Its amount is so small that the income produced is generally insignificant. Usually its collection is very lax. Frequently it is added to the property tax of each taxpayer, with no attempt to collect it from others. The yield is so small that it hardly pays for the trouble and expense of collection. There is nothing good to be said of the poll tax as it exists at present, and the best thing would be to give it up entirely.

**Business license taxes.** — Many of our states and local governments impose taxes upon corporations and individuals for the privilege of engaging in certain kinds of business. Such taxes are generally called *license taxes*. Before the adoption of prohibition, the commonest example was the license tax upon saloon keepers. Other common examples are the license taxes generally imposed by cities upon public hack drivers, taxicab owners, expressmen, and peddlers. Some of these taxes are small

and intended only to cover the cost of regulation; in that case they are fees, rather than taxes. But in other cases they are intended to produce a revenue and are real taxes. Most of the southern states have very extensive systems of license taxes upon a great variety of businesses, and considerable revenue is thus obtained. Except in the south, the income obtained from licenses is not important.

**Taxation of corporations.**—The most important business taxes in the United States are the special taxes levied upon corporations. The income tax imposed upon corporations by the federal government has been noted already. We must now study the taxation of corporations by the states.

**Difficulties under the general property tax.**—As stated in Chapter XIII, a corporation is, in the eyes of the law, a person, and can own property like an individual. When the first corporations were organized in the United States, in the first half of the nineteenth century, the general property tax was the principal form of taxation in the states and their local subdivisions. A corporation, being a legal person and owning property, was assumed to be taxable exactly like an individual. But it was not long before difficulties arose. In the first place, if the corporation was taxed on all its property and then the stockholders and bondholders were taxed on their stocks and bonds, this was unjust double taxation; the same wealth was taxed twice. Since it was easier to tax the corporation once for all than to discover and tax all the stocks and bonds of individual owners, the taxation of the corporations continued. Some states avoided double taxation by giving up the taxation of stocks and bonds. In other states, double taxation continued.

**More difficulties.** — Now came another difficulty. It has proved impossible to assess the property of many great corporations by the methods of the general property tax. Ordinary assessing is done by town or county assessors. They have a fair knowledge of the value of land and ordinary buildings. But to assess a great factory full of complicated machinery requires an expert knowledge which the local assessor does not possess. The same is true of the property of railroad corporations, telephone and telegraph companies, banks and insurance companies, and many other classes of corporations. Moreover, the wealth owned by certain corporations is spread over many towns and counties, and even into neighboring states. It is ridiculous for the assessors of each town to try to value a few miles of railroad track or a certain number of telephone poles and wires. Also, it did not appear fair that the taxes on valuable terminals, stations, roundhouses, and shops, or on great office buildings, worth millions of dollars, should all go to the few lucky towns in which they happened to be located, while other towns had to be content with the taxes levied upon a few miles of right of way and track. And finally, what could be done about the locomotives and cars which passed through all towns but were not permanently located in any town?

**State assessment of corporate property.** — These conditions led in many states to central assessment of the whole property of certain kinds of corporations by state officers. The whole property of a corporation having been valued, the value is distributed among the towns and counties, each of which may then tax the corporation on its share of the value of its property and at the town rate. This is one of the common methods to-day in the taxation of such corporations as railroads, telephone

and telegraph companies, car companies, and power companies.

**Other methods of taxing corporations.** — The method just studied is a modification of the property tax. Experience has shown, however, that property is not generally the best basis for taxing corporations. Many states have therefore given up the property basis and devised other special methods for taxing certain classes of corporations. One of the leading methods is the gross earnings tax, by which the corporation pays a tax equal to a certain percentage of its gross earnings. Railroads, telephone and telegraph companies, express and car companies, water, gas, electric, and power companies, and others are taxed by this method in a number of states. Net income is used as the basis for certain corporations in a few states. Manufacturing and mercantile corporations are sometimes taxed in this way. Insurance companies are generally taxed on their income from premiums. Sometimes corporations are taxed on the value of their stock or their stock and bonds. This is the usual method in the taxation of banks.

**Excises.** — *An excise is a tax levied upon the manufacture or sale of certain commodities.* In the United States excises are used by the federal government, but very little by the states or local governments. The best known example is the United States "internal revenue" tax on tobacco. For example, every manufacturer of cigars must obtain a license from the national government and must pay a tax upon all cigars made by him. The tax is levied by means of stamps, which the manufacturer must buy of the government and paste on the box of cigars. This shows to everybody that the tax has been paid. From the time of the Civil War to the World War the national government obtained about half of all

its revenue from excises on liquors, tobacco, and a few other articles. During the World War, excise taxes were levied on a great many other articles; for example, automobiles, soda fountain drinks, many kinds of drugs, and a great many so-called "luxuries." Prohibition did away with the excise on liquors, and most of the special war excises have been given up. The excise on tobacco is still an important source of federal income. The excise system is very simple. Usually only a few articles are taxed and the rates are simple and generally uniform. For this reason and on account of the use of stamps, the system is easily administered, there is very little evasion, and the cost of administration is low.

**Customs.** — *Customs are taxes levied upon commodities as they enter or leave the country; i.e., on imports or exports.*

**The United States tariff.** — In the United States the word *tariff* is generally used instead of customs, and the taxes so levied are commonly called *duties* or *tariff duties*. The national government is the only one permitted by the United States constitution to levy customs, and duties on exports are forbidden. The only customs in the United States, therefore, are the tariff duties on imports levied by the national government.

The tariff has been until recently the most important source of income of the United States government. From the establishment of the nation in 1789 to the Civil War it was usually the only important tax levied, and from the Civil War to 1913 it provided about half the government income. Since then the income tax has become the most important source of revenue.

**Customs administration.** — Unlike the internal revenue system, the United States tariff is extraordinarily complex. Almost every kind of commodity imported into the country is taxed. Thousands of different rates of the most com-

plicated sorts are imposed. There are two important kinds of rates. (1) *A specific rate is a certain amount of money for each physical unit of the commodity.* Thus, the tariff on butter may be  $2\frac{1}{2}$  cents per pound. (2) *An ad valorem rate is a certain percentage of the value of the commodity.* For example, the duty on woolen cloth may be 35 per cent. The tariff of the United States includes both specific and ad valorem rates and sometimes a combination of both. Administration of the tariff is a big undertaking. The frontier of the country, both land and sea, must be watched by officers of the government to prevent "smuggling," i.e., bringing in goods secretly without paying duty. All merchandise entering the country must first go to the customhouse and be examined, measured, or valued, and the proper duty must be determined. The baggage and even the persons of travelers entering the country must be searched. An army of inspectors, detectives, appraisers, and other officers is employed. The cost of administration is therefore much greater than that of the internal revenue taxes.

**Double purpose of customs.** — Customs have one important peculiarity. The normal purpose of taxation is to raise revenue for the government. All of the other taxes we have studied are imposed solely, or almost solely, for this purpose. The customs frequently have another purpose; namely, to give aid, or "protection," to manufacturing and other industries in the home country. Great Britain is almost the only important nation which uses her customs for revenue only. Practically all other countries, have the double purpose of revenue and protection. This double purpose explains most of the complexities and confusions and administrative weaknesses of the United States tariff. The subject of protection will be studied in the next chapter.

**The shifting of taxes.** — Having studied separately the principal kinds of taxes, let us now look into the economic effects of taxation. The United States government imposes upon all cigar manufacturers an excise of \$1.50 to \$15.00 (depending on the value of the cigars) per 1,000 cigars made. This tax is an addition to the cost of making cigars. In competitive industry everything which increases costs tends to increase price. Cigar manufacturers cannot continue to sell cigars at the old prices. They are compelled to add the tax to the price. The burden of the tax is therefore *shifted* from the manufacturer to the dealer. The dealer, of course, having to pay a higher price, must charge a higher price. He thus passes the tax on to the next buyer. So the tax is passed on till the consumer of the cigars is reached. Such a tax, therefore, is finally borne, not by the manufacturer, upon whom it was imposed, but by the consumer of the goods. Practically all excises are thus shifted.

The same thing happens in the case of the customs. The importer adds the duty to the price at which he formerly sold the goods, and the tax is passed on, by increases in price, till it finally falls upon the consumer. Most business license taxes, likewise, add to the cost of business and so are shifted through increased prices.

**Indirect taxes.** — *A tax which is regularly shifted by the person on whom it is imposed to the consumer of the goods is called an indirect tax.* What makes it possible to shift a tax is the fact that the tax has increased the cost of making every unit of the product and so has raised the price.

**Direct taxes.** — Not all taxes are shifted. When a tax does not cause an increase in cost of production it will not be shifted. Here are some examples. (1) The inheritance tax is not shifted. There is no effect on cost of



production of anything. There is no price to be raised by the person who pays the tax. He must pay it and be content to have his bequest reduced by so much. He has no power to shift the burden to any one else. (2) Likewise the individual income tax has nothing to do with cost of production. There is no price to be raised. The taxpayer bears the burden and cannot shift it. (3) This is generally true of the property tax, though there are some exceptions. (4) The poll tax, obviously, cannot be shifted. (5) A tax on monopoly profits cannot be shifted, if the monopolist's prices are fixed at the point that will give him the maximum profit, (pages 183-184). Suppose a monopolist is selling mineral water at 50 cents a bottle and making a profit of \$50,000 a year. Now suppose the government lays a tax of 10% on his profits. It will do him no good to raise his price. Suppose he tries it, making the price 60 cents. Since the former price was the one that gave him the maximum profit, his profits will now decline, let us say to \$48,000. His tax will be \$4,800, and he will have \$43,200 left. But he would have been better off if he had paid a tax of \$5,000 on \$50,000 of profits. That would have left him \$45,000. It is better to pay 10% on a large profit than 10% on a smaller profit. The monopolist will therefore find himself unable to shift the tax on his profits. (6) The same is generally true of all taxes that fall, not on all profits, but on extra large profits or profits above a certain considerable minimum, like the excess profits tax imposed by the United States during the World War. Such taxes on profits do not raise all costs of production and are generally not shifted. *A tax which is not regularly shifted but is borne by the person on whom it is imposed is called a direct tax.* The six taxes mentioned in this paragraph are examples of direct taxes.

**Consumption taxes.** — The term *consumption tax* is commonly used to mean a tax which raises the price of some commodity or service to the consumer. Most indirect taxes are consumption taxes. As is said, "They increase the cost of living." It makes a great difference whether consumption taxes are imposed upon necessities or luxuries. In the former case, such as the excise on salt which some nations impose, the tax may be a heavy, unjust burden on the poor. No great injustice can come from a tax on luxuries. On the other hand, a tax on articles consumed only by the rich will not yield much revenue, since not many of the articles will be made. The ideal consumption tax is one imposed on an article of wide general use and inelastic demand but which is not a necessity of life; for example, the tobacco tax.

#### EXERCISES

1. In what two ways is the inheritance tax generally progressive?
2. Why does the poll tax produce so little revenue?
3. Why is it harder to tax the property of corporations than of individuals?
4. Construct a definition of "double taxation." Give some examples. Is double taxation necessarily unjust?
5. Why does the tariff cost more to administer than the internal revenue system?
6. State whether each of these taxes is direct or indirect, and explain: (1) poll tax, (2) tariff, (3) income tax, (4) dog license tax.

**References for further study.** — Hunter, M. H., *Outlines of Public Finance* (1921), pages 157-229; 309-386. Seager, H. R., *Introduction to Economics* (1905), pages 555-588. Ely, R. T., *Outlines of Economics*, Third Revised Edition (1916), pages 710-739. Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. II, pages 532-538; 552-562. Fetter, F. A., *Modern Economic Problems* (1916), pages 270-280. Mill, J. S., *Principles of Political Economy*, Book V, Chapters IV-VI. Seligman, E. R. A., *Essays in Taxation*, Ninth Edition (1921), (see Table of Contents).

## CHAPTER XLI

### THE PROTECTIVE TARIFF

**“Free trade versus protection.”** — In the last chapter we learned that customs (or tariffs) are commonly imposed, not only for the sake of revenue, but also to give aid to certain industries in the home country. The wisdom of this policy has always been open to serious question. A dispute has thus arisen over *the protective tariff*, which has raged in many countries, but nowhere so continuously and violently as in the United States. The conflict over “free trade *versus* protection” has gone on, interrupted only by occasional lulls, from the colonial period down to the present day. Scarcely any practical problem in economics is more important than this. We must therefore study carefully the economic principles of the protective tariff.

**Free trade leads to international division of labor.** — We have learned that when people are left free to trade as they wish, every one seeks to buy in the market where prices are lowest and to sell where prices are highest. This results in international division of labor; the people of each nation “specialize” in producing those things for which their nation is especially adapted. Other things they obtain from abroad, more cheaply than they could produce them at home. As a result they have a greater amount and variety of wealth to enjoy than would be possible if everything had to be produced at home.

**Effect of the tariff.** — International division of labor always takes place when trade is free. It can be checked

or prevented by governmental interference with freedom of trade. Let us study a simple example. Suppose it costs \$1.50 to make a certain kind of pocketknife in this country, whereas the same knife can be made abroad and sold in our markets for \$1.00. Under these circumstances this kind of knife would not be made in this country but would be imported. Now suppose Congress imposed a tariff upon such knives. What would be the result? It all depends on the amount of the tariff. A tariff of \$.10 each might be imposed. This would make the foreign knives cost \$1.10 in our market. At that, they would be cheaper than if made in this country. None would be made here; we should continue to import all we used; and the government would collect \$.10 on each knife imported. This tariff would produce revenue for the government but, on account of the low rate, would not give protection to home manufacturers.

**Foreign trade diminished; new home industries created.** — But now let us suppose the tariff is raised to \$.55 on each knife. The foreign knives will now cost \$1.55 in our markets. But we can make them ourselves at a cost of \$1.50. American manufacturers will accordingly take up the making of the knives, they will be sold at \$1.50, and we will no longer buy any from abroad. We thus arrive at an economic law. *By means of a tariff greater than the difference between the cost of production at home and abroad the import of practically any commodity can be stopped and a home industry built up.* A tariff which accomplishes this gives *protection*; it is a *protective tariff*. Of course, so far as a tariff prevents imports, it yields no revenue to the government.

This policy can be carried as far as desired, up to the point where imports of almost every sort are made impossible and there is hardly any foreign trade. However far

it is carried, the result is the growth of new industries that did not formerly exist. International trade is diminished. The nation does not "specialize" so much. There is more "diversity of industry." A certain number of things, which could have been obtained cheaply from abroad, are now made, at greater cost, at home.

**The heart of the controversy.** — Right here we come to the heart of the controversy over protection. The "protectionist" says that it is to the advantage of the nation thus to increase diversity of industry. The "free trader" says this is a loss to the nation, that the nation gains most when it enjoys all the advantages of international division of labor.

**Meaning of free trade.** — Let us stop a moment here to ask what is meant by the term *free trade*. Free trade does not mean no tariff at all; it only means no protection, or, in other words, a tariff for revenue only. The free trader is not opposed to tariff; he is opposed only to protection. There is no country in the world that is entirely without a tariff, and nobody advocates this.

**The revenue tariff.** — But it is possible to have a tariff that gives no protection; i.e., a *revenue tariff*. This can be accomplished by following two simple rules. (1) Lay the duties on articles that cannot be produced at home. For example, Great Britain lays duties on such articles as tea, coffee, and cocoa, which could not be produced in England. There is no possibility of building up a home industry; hence no protection is given. (2) The other rule is to couple with every tariff duty an excise duty of the same amount. This will raise equally the cost of the homemade article and the imported article, leaving them in the same relative positions as before. If the imported article was cheaper, it will still be cheaper, no matter how heavy the duties. Hence there is no

protection. By following these two rules, Great Britain has built up a revenue tariff, giving no protection, interfering little with international trade, yet producing a large revenue for the government.

**The arguments for protection.** — We may now return to the conflict over the protective tariff. The advantages of trade (see Chapters XXIX, XXX, and XXXI) are so clear and so important that the burden of proof rests on those who claim that a nation will gain by putting artificial restrictions upon its foreign trade. Let us examine the principal arguments usually advanced in favor of protection.

(1) **The favorable balance of trade argument.** — First of all we come to the argument that a nation gains in its foreign trade only through its exports; that imports are a loss; and that the tariff is an advantage through its influence in checking imports. This argument rests on fallacies regarding the nature of international trade which we have already studied, in Chapter XXX. It was there shown that exports have no superiority over imports. We saw also that the two sides of the trade balance tend to be equal. If, therefore, the tariff cuts down our imports, it must eventually reduce our exports just as much. It is therefore neither desirable nor possible to reduce imports without also reducing exports. This argument needs no further study.

(2) **The gold argument.** — It is argued that a "favorable" balance of trade causes gold to flow into the country, which is a national advantage. This argument is simply a corollary of the preceding and is based on the same fallacies regarding international trade. We learned in Chapter XXX that it is neither desirable nor possible for a nation to pile up gold by means of an excess of exports over imports.

(3) **The added industry argument.** — It is argued that the tariff, by causing the development of additional home industries, is an advantage to the nation. It is admitted by all that the tariff can cause new industries to appear. The point overlooked is that these added industries are the result of capital and labor diverted from other industries which we should otherwise have had. When the people are induced by the tariff to turn to making something that they used to buy abroad, they have to give up something else that they were doing. The same capital and labor cannot be employed in both the old and the new industries at the same time. And if new capital and labor are coming into the country, it would have been more profitable to employ them in those industries which are naturally fitted to the nation, rather than in unfavorable lines which will not be entered except under the influence of the tariff. In short, when the tariff builds up new industries, it does not add anything to the nation's total industry. It merely diverts capital and labor from other industries. This conclusion also follows from what has been learned about international trade, as pointed out in the discussion of the "favorable" balance of trade argument. When the tariff causes the building up of a new industry, it does so by shutting out an article formerly imported. This reduction of imports must cause an equal reduction of the country's exports. Some home industry that was engaged in making articles for export is therefore driven out of business. Thus the tariff, while adding a new industry, kills an old industry. There is a diversion of industry, not an addition to industry. And since industry is thus diverted from the more profitable into the less profitable lines, the result is a net loss for the nation. This argument for protection rests largely on misunder-

standing of the nature of trade and international division of labor.

(4) **The wages argument.** — (a) It is claimed that the tariff, by causing the development of added industries, increases the demand for labor, and so raises wages. This argument is, of course, based on the preceding one. It fails just as soon as we understand that the tariff does not increase, but simply diverts industry, and so cannot add anything to the demand for labor.

(b) The wages argument is sometimes put in another form. It is said that, without the tariff to keep out cheap foreign goods, American manufacturers could not pay their present high wages, but would have to reduce wages or else go out of business; the tariff is therefore in the interest of the workingman. Here is the answer: Many American industries get along perfectly well without protection; they are the industries that are naturally fitted to flourish here. They have no difficulty in paying the high level of American wages; they pay just as high wages as the protected industries. The only industries that would be unable to pay present wages without protection are those very ones that were artificially built up by the tariff. We have just seen that the diversion of industry into these lines was a net loss to the nation. If the tariff were removed, this capital and labor would go back to the more favorable industries. The laborers would suffer nothing (except temporary inconvenience) from the change.

**Wages and labor cost.** — (c) There is a good deal of careless talk about wages. Protectionists claim sometimes that, just because wages are high, it costs more to produce anything in this country. They are frightened at the prospect of competition with the products of "foreign pauper labor." Now farm wages are probably



higher in our Mississippi valley than anywhere else in the world, yet wheat can be produced there more cheaply than anywhere else. The reason, of course, is in the natural advantages of soil, and climate, and the skillful use of machinery. In many lines of steel manufacture, goods are produced more cheaply in America than anywhere else in the world, in spite of high wages. The cause is to be found in our marvellous natural resources and the skillful organization of the industry. In most industries high wages are paid because of the high skill of the workers. They are "worth it." Few American employers would be willing to exchange their skilled laborers for Chinese coolies even at the low wages which such labor receives in China. It is worth noting that the countries whose competition our manufacturers most fear are England, Germany, and France; not China, India, or Africa. In spite of the talk of "foreign pauper labor," they are most afraid of the competition of those countries where wages are high. In fact the successful industrial nations are the very ones where wages are high, not low.

High or low wages, as such, mean nothing in international competition. The only important thing is *labor cost of production*, a very different matter. If an American manufacturer can get in a day 100 yards of cloth per man employed at a wage of \$5, while his foreign competitor, paying only \$4, gets 75 yards, which one has the advantage? To answer this question we must find the *labor cost* per yard of cloth, by dividing the wage by the amount produced. The result is a labor cost of 5 cents a yard in America and  $5\frac{1}{3}$  cents abroad. The American has the advantage, so far as labor is concerned. High wages are no handicap to him. This is the normal condition in those industries that are favorable to us.

Only in those industries which are unsuited to American conditions are high wages an obstacle. It is only these industries that have to depend on the tariff.

**Effect of withdrawing protection.** — The wages argument is the one upon which the protectionists in the United States chiefly rely. Without doubt many American employers honestly believe that the tariff is necessary not only to their own profits, but also to the well-being of their employees. Those who are engaged in lines of production which could not exist without tariff protection realize that, without protection, they could not continue to give employment to their laborers at the present scale of wages, or indeed at any wages at all. They picture the distress that would follow from throwing all these workers out of employment. They forget that these workers would eventually find just as remunerative employment in other industries, not dependent on the tariff. But even so, there would be some temporary inconvenience and suffering during the process of shifting. This no one can deny. Industry that has become adapted to the artificial condition of protection cannot instantly adjust itself to free trade without loss, both to capitalists and to laborers. This is not a valid argument for retaining permanently the artificial condition. But it is an argument against sudden and sweeping reduction or removal of protection. Capitalists who have invested in certain industries, relying in good faith upon the government's policy of protection, are right in asking that a change in that policy be made gradually and carefully so as to minimize the necessary losses of readjustment. The laborers employed in such industries have a right to the same consideration, though their risk is less than that of the owners.

(5) **The infant industry argument.** — Suppose we are

buying from foreigners an article which could some day be made in this country just as cheaply. The reason it is not now made here is that foreigners have started ahead of us. They have developed the machinery; they have the trained workers. While we are getting started, it will cost us more. Now if a tariff were put on for a few years it would counteract these difficulties of starting; later it could be removed and the industry would stand on its own feet. The argument for such temporary protection is called the "infant industry" argument. Note (a) that it can apply only to an industry which is suited to our natural conditions; (b) that the obstacles to be counteracted are *temporary*, not permanent; (c) that the tariff must be only temporary; and (d) that after the removal of the tariff, the industry will be able to stand on its own feet. When all these conditions are met, and when it is proved that it would benefit the nation thus to hasten the coming of the industry, this argument is correct. In the early history of the United States it was an important argument. To-day it is of little practical importance. The United States is a developed industrial nation. We have few "infant industries" that need temporary protection. As a matter of fact this argument has not usually been urged in good faith. It has been used to get the tariff, after which other arguments were brought forth to prevent the later removal of protection. Most protectionists to-day advocate permanent protection.

**Fallacy of the arguments for protection.** — The foregoing are the chief arguments used in the attempt to prove that the protective tariff is a benefit to a nation *economically*; i.e., that it will increase the wealth of the people. They have all been shown to be false, with the exception of the "infant industry" argument under

certain conditions. A simple way to expose the fallacy of the whole set of arguments is to notice that they are just as effective in proving that different parts of the same country should have protection against each other. For example, suppose that the seceding Confederate States had won the Civil War. We should then have had two nations, north and south. Each would have had its tariff to give protection against the other. If the protectionist arguments were true, each nation would be benefited by its tariff. Then why should we now forego those advantages, merely because we are one nation? Notice that nothing can be found in any of the arguments that makes them apply only to two separate nations. And if it is once admitted that the whole United States is better off with free trade between north and south, why would not the United States and Canada as a whole be better off if their tariffs against each other were abolished by mutual agreement?

**Conclusion.** — Our conclusion is that the protective tariff is an economic burden, a cause of loss. The cost of living is raised for all the people, and what little benefit there is goes to the entrepreneurs in the protected industries. The people are deprived of the advantages of international division of labor and are made poorer in the wealth that satisfies their needs. The economic advantage is all on the side of freedom of international trade.

(6) **The military necessity argument.** — There is another line of argument for protection of an entirely different sort. Certain industries are necessary to a nation's safety in time of war. If such industries do not exist naturally, they may be developed by means of a protective tariff. There can be no doubt of the wisdom of protection for this purpose, provided that it is proved

(a) that the particular industry really is necessary to national safety and (b) that the industry could not develop without protection. Notice that in this argument there is no false idea that the protected industry will be a source of wealth to the people. Economically it will be a loss, by forcing the people to pay more than necessary for a certain commodity. But if this is the cost of national safety it is worth while, like the cost of a battleship or any other cost of military preparation.

**Protection by bounties.** — Protection is sometimes given by means of *bounties*, that is, payments of money by the government to those engaging in the favored industry. The United States has sometimes sought to encourage the production of sugar by means of bounties. The arguments for and against bounties are exactly the same as apply to the protective tariff. There is just one important difference. The cost of the tariff is borne by the users of the protected article in proportion to their consumption. The cost of the bounties is borne by the taxpayers in general. This makes bounties generally somewhat less unjust than the tariff. Bounties are seldom used, probably because it is here so easy to see that a burden is placed on the whole people for the benefit of a favored few. Of course bounties, like the tariff, may properly be used on account of military necessity.

**Ship subsidies.** — The question of *ship subsidies* is similar. Ship subsidies are bounties paid to ship owners for the sake of developing a national "merchant marine." The arguments in support of this policy are exactly the same as are urged for the protective tariff. Ship subsidies can be justified, if at all, only on the ground of military necessity.

## EXERCISES

1. It is not now possible to raise coffee at a profit in the northern part of the United States. Could anything be done to make it possible? If so, what, and what would be the results?
2. Is anybody better off on account of the tariff on imported diamonds (assuming that none are produced in this country)? Is anybody worse off? Explain.
3. Would the answer to Question 2 have been different if the commodity had been sugar (which is produced in this country)?
4. Would it be possible to reduce revenue by raising tariff rates? Explain.
5. State the chief difference between a revenue tariff and a protective tariff.
6. If the present tariff on woolen cloth were removed, what would be the probable results on (1) wages, (2) profits, (3) the cost of living, (4) the revenue of the government?
7. Does an industry always need protection because wages are high? Give reasons.
8. What kind of industries would have to be given up if there were no protective tariff?

References for further study.—Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. I, pages 507-544. Seager, H. R., *Introduction to Economics* (1905), pages 368-384. Johnson, A. S., *Introduction to Economics*, Revised (1922), pages 417-447. Carver, T. N., *Principles of National Economy* (1921), pages 443-468. Ely, R. T., *Outlines of Economics*, Third Revised Edition (1916), pages 368-383. Fetter, F. A., *Modern Economic Problems* (1916), pages 199-239. Mill, J. S., *Principles of Political Economy*, Book V, Chapter X, Sec. 1. Taussig, F. W., *Tariff History of the United States*, Sixth Edition (1913), (see Table of Contents). Taussig, F. W., *Free Trade, the Tariff, and Reciprocity* (1920).

## CHAPTER XLII

### GOVERNMENT INDUSTRY

So far we have been studying chiefly the primary functions of government and the ways in which governments secure the money to pay the costs of these functions. But we have also learned that governments frequently engage in industrial enterprises, furnishing goods or services to the citizens on about the same basis as private business.

**The motives of government industry; industry for profit.** — Governments do not engage in business indiscriminately. As a rule, industry is left to private enterprise. The government generally has some special reason for going into any particular industry. Sometimes the government goes into business to make a profit, like any individual business man. For example, the French government engages in the tobacco business for profit. During the World War, the United States raised the rates on letter postage and so conducted the first-class (letter) mail business for a profit. When a government runs a business for profit, it is generally found necessary to make it a government monopoly by law, so as to prevent competition by private enterprise. The French tobacco business and the business of carrying first-class mail in the United States are government monopolies. However, modern governments seldom go into industrial enterprises for profit, and the incomes from government industries are seldom more than enough to pay the costs.

**Industry for the sake of primary government functions.** — Governments more often take up certain industries because it is believed necessary to the performing of some primary government function. For example, when the telegraph and telephone were invented, the European rulers saw at once the great military importance of these services. They felt that it would not be safe to leave them in private hands; in other words that the performance of the function of defense necessitated government control. This explains why the telegraph and telephone have always been government industries in many European countries. This is also the chief reason why the railroads were taken over by the states in Germany. We have practically no example in the United States of an industry carried on for military reasons. The telephone and telegraph are privately owned. But it is interesting to note that the United States government found it necessary to take over the railroads temporarily during the World War. An interesting example in this country of a government industry run in the interest of the government's primary functions is the United States government printing office. In carrying on its ordinary business, the government needs so much printing that a government printing establishment was found desirable. It is the greatest printing establishment in the country.

**The post office.** — The one universal example of a government industry undertaken for this reason is the post office. This is a government enterprise in nearly every nation of the world. Sometimes its establishment has been due to military needs. But the principal reason for the government post office is the feeling that communication must be easy and cheap for all the people in order that the government may be strong and successful.



Only thus can public sentiment and patriotism be fostered; only thus can the people have a "national feeling" and express it, so that the government may act as the people desire. It is felt that those ends would not be accomplished if the business of handling the mail were left to private enterprise. Hence practically all the governments in the world have control of the postal business.

**The United States post office.**—The post office is the only great nation-wide government industry in the United States. Mail matter is divided into four classes. The first class consists of letters and all other written matter, also all matter that is sealed. The charge is 2 cents an ounce (postal cards, 1 cent). The second class consists of newspapers, magazines, and other periodicals. When mailed by any person except the publisher or news agents, the rate is 1 cent for each 4 ounces. Publishers and news agents have special rates: for that part of the periodical which consists of reading matter the rate is only  $1\frac{1}{2}$  cents a pound; for the advertising matter the rates are from 2 cents to 10 cents a pound according to the distance. The third class includes all other printed matter (except books), such as circulars, pamphlets, etc. The fourth class consists of "merchandise" and books and everything else not included in the first three classes. For the smallest packages (weighing 4 ounces or less) the rate is 1 cent an ounce. All packages weighing more than 4 ounces go by "parcel post," at rates which vary with the weight and the distance in accordance with a system of "zones."

**The "flat rate."**—This system of classification and rates is peculiar in several ways. Notice first that, for the first and third classes and to a great extent also for the second class, the rates depend only on the weight of

the package without any reference to the distance carried. The charge for a letter to your next-door neighbor is the same as for one that goes four thousand miles across the continent. One reason for this is that the greater part of the cost of handling the mail is in collecting and delivering at the two ends, and this cost is, of course, the same whatever the distance carried. Disregarding the distance makes the business much simpler than it would otherwise be. But the chief reason for the "flat rate" is the desire of the government to make communication cheap and wide-spread over the whole country. The costs are averaged, and the people living in remote and inaccessible places are given an advantage at the expense of those in the thickly settled regions. This, as we have seen, was the principal reason for making the post office a government industry.

**Discrimination between first and second class.** — Another peculiarity of the United States post office is the great difference between the rates charged in the first and second classes. First-class mail pays very high rates, much higher than the cost of the service. The post office does not keep accounts that show the receipts and expenses for the separate classes, but it is probable that there is a profit of 50 per cent or more on first-class mail. On the other hand, the rates for second-class mail are very low. It costs the post office to handle this mail several times as much as it receives. The government has a monopoly of the business of handling first-class mail. Otherwise it would be impossible for it to charge such high rates. The profit made on the first class, however, is all wiped out by the loss on the second class. The post office business, as a whole, is run at a considerable loss, which has to be made up out of the income from taxation.

**Few state industries.** — The states of the United States, with very few exceptions, have hardly anything in the way of government industries. Before the Civil War, a number of states went into railroading, banking, and some other industrial enterprises. These ventures were almost all such disastrous failures that the states have since then generally fought shy of government industry.

**Municipal industries.** — The American cities and towns frequently carry on industrial enterprises. The commonest form is the business of supplying water. A great many cities own and operate their water supply systems. There are some municipal gas systems, municipal street car lines, and a few other examples.

On the whole, aside from the post office, government industry has not gone very far in the United States, not nearly so far as it has in certain European countries.

**The arguments for government ownership.** — Some people believe that government industry is an advantage to the people. They point to the large sums paid in interest to private capitalists and the large profits made by private entrepreneurs, and they say that these gains might just as well go to the public. They charge discriminations and unfair treatment by private industry and claim that a government enterprise would treat all alike, pointing to the post office as an example. So it is argued that government industry should be extended as far and as rapidly as possible.

**The case against government ownership.** — This argument overlooks some important facts. In the first place, the government cannot get capital without paying interest, any more than a private entrepreneur; unless it confiscates private property without compensation, which is so flagrantly unjust that few advocates of government ownership would urge it.

**Politics.** — Secondly, it is very doubtful if, under government ownership, there would be any profits to distribute to the people. It is a fact that government management is generally less efficient than private business. Politics enter in the choice of employees. It is notorious that most government employees are appointed because of their political views and services rather than their fitness for the work. United States postal employees have furnished a well-known example. Everybody knows how our city jobs are handed out as political rewards. Government industry thus has less efficient labor than private industry. Also politics interferes with discipline. Workers cannot be controlled, the incompetent cannot be discharged, without arousing political protest. Those in charge are afraid of this. The employees in government offices have often succeeded in preventing the introduction of labor-saving machinery, cost accounting, efficiency systems. For fear of political trouble, the managers dare not enforce discipline and efficiency. Anybody who cares to take the trouble to visit the office of a city department and then the office of a great corporation will notice the lax, easy-going spirit in the government office as compared with the lively efficiency of the private business. Or go out and watch a gang working on the road. You can generally tell, by simply noticing how the laborers work, whether it is a private or a government job.

**The motive in private and in public business.** — There is another serious weakness of government industry. The private business man uses his best energies to make his business a success, because he has risked his own capital in it; he will suffer loss if it fails; he will make profits if it succeeds. Self-interest is the spur that makes him efficient. Even the hired manager of a corporate business

is spurred on by the knowledge that the stockholders are looking to him to safeguard their capital and make profits for them. His own position and prosperity depend on his efficiency in the business. But the public officials in charge of a government industry do not have this motive for efficiency. They are not risking their own capital. The profits will not go to them. They will not bear the losses. Their jobs depend on pleasing, not a critical group of stockholders, but simply the general body of voters or the leaders of the political party. Such approval is apt to be won by easy-going treatment of employees and showy service to the public, rather than by the hard test of business success. Government industry is thus weakened at the top.

**Government accounts.** — No private business man would think of running his business without keeping accurate accounts. We have learned how careless all grades of government in the United States are about their budgets. This carelessness runs through the accounting systems of practically all government offices. The United States post office goes along with crude accounting methods which no great private corporation could stand for a day. It is seldom possible to tell exactly what the financial results are in a government industrial enterprise. This laxity in accounting is a further defect of government industry.

**Discrimination.** — The supposed superiority of government industry in giving equal treatment to all is not very important. Few private businesses make such glaring discriminations as are made by the United States post office, for example. First-class patrons are charged far more than the cost of the service. Periodical publishers receive a valuable service at a small fraction of its cost. Through the flat rate, people in scattered,

remote sections are favored at the expense of those in thickly settled parts of the country. These discriminations may be justified, but they show that government industry does not necessarily avoid discrimination. It is probable that there is at least as much discrimination between shippers on the state railroads of Germany as there is on the privately owned railroads of the United States.

**Conclusion against government ownership.** — These weaknesses of government industry are so serious that governments are seldom able to furnish commodities or services at as low a cost as private businesses. We have learned that few government industries make any profits. Generally they are run at a loss, which has to be made up by taxation. When the government does undertake to make a profit, it is almost always necessary to give it a monopoly; otherwise it would be driven out of business or forced to run at a loss by the competition of the more efficient private business. This is the case with the French tobacco business and the United States first-class postal business. It is to the interest of the people to have things produced at the lowest possible cost. Private business can generally produce more cheaply than government industry. It does not do the public any good to wipe out private profits if the cost of the goods is increased to the consumers. The general conclusion, therefore, is decidedly against government industry, except when the enterprise is necessary to the accomplishment of the government's primary functions.

**The case of monopoly.** — But this does not quite end the argument. As we learned in Chapter XX, certain industries have a natural tendency to become monopolistic. We learned also that a private monopoly is generally not in the public interest. In such cases, the

general conclusion which we have just reached as to the superiority of private over government industry does not necessarily hold. It is possible that the evils of private monopoly may outweigh the evils of government ownership. It is in these lines of industry that government ownership is being urged most strongly to-day. Such industries include, for example, the railroads, the telegraph, the telephone, the express business, and such municipal industries as water supply, gas, electricity, street railways, etc. These are generally what we have called the great public utilities.

**Conclusion as to public utilities.** — There is no way of settling offhand the question of government ownership of public utilities. One thing is certain: the public cannot permit unregulated private monopoly. The choice is between private business with government regulation, and government ownership. On this question it is fair to put the burden of proof on the advocates of government ownership. We have not yet made a real test of government regulation. If that fails, we can then turn to government ownership. If we should first adopt government ownership and that should fail, it would be very difficult to return to private industry. We shall probably have to settle the question slowly, by experiments here and there. Some cities have municipal street railways. Others have private lines. Gradually by studying the experiences of different cities we ought to be able to form some conclusion as to the better method. We had a sort of experiment with government ownership of railroads during the war. While the lessons to be drawn from that experience are not entirely clear, much has been learned, and it is safe to say that the case for government ownership was not strengthened. The telephone and telegraph likewise were taken over by the

United States government during the war and afterward returned to their owners. Since then the number of influential people advocating government ownership has greatly decreased. It appears that the prevailing attitude of the American public is in favor of making further careful tests of government regulation before accepting government ownership.

### EXERCISES

1. Make a list of the reasons why government industry is less efficient than private.

2. How does the motive in government industry differ from the motive in private industry?

3. If we grant that government industry is less efficient than private, what reasons may yet be advanced in favor of government industry?

4. Does the government of the United States operate the post office on businesslike principles? Give reasons for your answer.

5. What reasons may be offered for charging in postage less than it costs to carry second-class mails? What are the arguments against this practice?

6. In the case of natural monopolies what two alternatives are open to the government?

7. Make a list of the industries which are usually proposed for government ownership. What common characteristic do these industries share?

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## PART VIII. THE DISTRIBUTION OF WEALTH AND INCOME

### CHAPTER XLIII

#### HOW THE PRODUCT OF INDUSTRY IS DIVIDED

How is the product divided? — So far in this book our principal attention has been given to production. As production goes on, there appears a continual flow of products (wealth and services) which are passed out to the several members of society for their use and enjoyment. This sharing of the product is called *distribution*, and it is this subject which we must now study. What determines the share each one shall receive? Any one can see that there is not an equal distribution. This is not merely a matter of chance. There must be some explanation of the way the product is divided. To find this explanation is the task now before us. We must learn the causes that determine the distribution of wealth and services.

**One kind of distribution.** — It may help us to understand the problem of distribution if we consider an imaginary company of people shipwrecked and stranded on an uninhabited island. They would realize that they must all go to work at once in order to get food, shelter, and the other necessities of life. Probably they would choose a leader, whose first business would be to parcel out the different kinds of work among the members of the company. Some men would be sent into the woods to hunt for wild animals and birds for food. Others would be sent to the shore to fish. Still others would

gather logs and driftwood or cut trees and start building huts. Some of the women would be detailed to cook, others to mend the clothing, etc. Even the boys and girls would have tasks assigned to them so far as they were able to work. In short, the whole company would be engaged in production.

At the end of the day each one would turn in what he had produced. How would all these products be divided? This would likewise be the business of the leader. At meal time, he would give each his portion of food. He would assign to each his place in one of the huts. Probably things would be divided about equally. Still there would very likely be some inequality. Those who had done the hardest, most disagreeable work might be given something extra. The sick would probably receive the most delicate food and the most comfortable quarters. The leader might take for himself the best house and perhaps other special favors.

**Distribution by authority.** — But whatever the plan of distribution, it would all be arranged and enforced by the leader. He would divide the products of the company's labor and give to each his share. There would be no buying and selling. Nobody would work for himself. And just because one man caught some fish, he could not call the fish his own and eat them or sell them for what he could get from others. Everything would be turned into the common store and then parceled out under the authority of the leader.

**Distribution based on exchange.** — But that method of distribution is not the way the products of industry are distributed among the people of the United States, or of any other modern community. Except for a very few things, which people make and keep for their own use, everything any one of us has was obtained by purchase.

And the only way any one gets the money for such purchase is by selling something that he has. The laborer sells his labor for wages. The factory manager and the railroad president sell their labor for salaries. The landowner sells the use of his land for rent. Other capitalists sell the use of their capital (i.e. lend it) for rent or interest, or invest it and get dividends. Business men perform labor and receive profits. Lawyers and physicians perform services for fees. Wages, salaries, fees, profits, rent, dividends, and interest are paid, usually, in money. With the money so received each person buys whatever products or services he may desire.

What determines each one's share? — It is clear, then, that whatever share anybody receives in the distribution of wealth and services is obtained in exchange for something which he has to contribute. And the amount of each person's share evidently depends on the amount of his wages or salary or interest or whatever other income he may receive. It follows that the value of each person's share is equal to the value of his contribution to the product. We must therefore study the causes which determine the rates of the various forms of income, such as wages, rent, interest, profits, etc.

#### EXERCISES

1. By what method is the income of a family distributed among its members? Is this the way the income of society is distributed?
2. What is meant by saying that each person's share of the product of industry is equal to the value of his contribution? Does this prove that the distribution is just or unjust?

References for further study. — Taylor, F. M., *Principles of Economics* (1921), pages 438-455. Marshall, A., *Principles of Economics*, Seventh Edition (1916), pages 504-545. Carver, T. N., *Principles of National Economy* (1921), pages 471-493. Ely, R. T., *Outlines of Economics*, Third Revised Edition (1916), pages 384-406.

## CHAPTER XLIV

### INTEREST FROM CAPITAL

**The income of capital.** — As we learned in Chapter XXI, the income from the use of wealth is called either rent or interest. When expressed in relation to the physical unit of wealth (as \$40 a month for the use of a dwelling house) it is called rent. When expressed in relation to the value of the wealth (as \$40 a year for a loan of \$1,000, or 4%) it is called interest. Wealth we have divided into two parts, land and capital. While the income from any kind of wealth may be expressed either as rent or as interest, we generally speak of the income of land as rent and the income of capital as interest. Moreover, there are important differences between the rent of land and the income of capital. We shall therefore find it convenient to study these two kinds of income separately. In this chapter we shall take up the income of capital, which we shall generally call interest. Our main problem is to find what determines the rate of interest (cf. Chapter XXI).

**Why do the lenders demand interest? Present vs. future.** — Why is interest always paid for loans? To answer this question, let us first see how the lenders feel about it. Then we shall look at the borrowers. When people lend they give up some of their wealth to a borrower who promises to pay it back at some future time. Lending is really an exchange of present wealth for future wealth. But if a man lends his wealth, that means

he cannot enjoy it himself until some future time. If Mr. Brown has a deposit of \$3,000 in the bank, he could draw it out and buy an automobile. If instead of that he draws it out and lends it for one year to his neighbor, Mr. Jones, then he cannot have an automobile till next year, when Mr. Jones pays him. Now if Mr. Brown is like most of us, he would rather have an automobile this year than next year. We may be pretty sure that Mrs. Brown and the Brown children feel that way about it. Why should he lend his \$3,000 to Mr. Jones and put off having an automobile for a year? The answer is that Mr. Jones is willing to pay him interest. He offers to pay back not only the \$3,000 but \$150 extra. Now Mr. Brown thinks that it may be worth while to wait a year for his automobile in order to get that \$150. It would buy an extra set of tires.

Mr. Brown represents lenders in general. They cannot lend and at the same time have the immediate enjoyment of their wealth. They cannot "have their cake and eat it too." By lending, they give up present wealth for future wealth, present enjoyment for future enjoyment. Almost everybody would rather have enjoyment now than the same enjoyment some time in the future. We all value present wealth higher than future wealth. Therefore borrowers have to offer some inducement to make people lend. They have to pay interest.

**Saving.** — There is another reason why interest has to be paid. How did it happen that Mr. Brown had \$3,000 in the bank? It was because he had been *saving*. For the past two or three years he had saved something out of his salary each month. He could have had more enjoyment if he had spent his whole salary. Why did he save and deprive himself of enjoyments he might have had? The reason was that he knew that he could lend

his savings and draw interest. He knew that when he had saved \$3,000 he could lend it and get \$150 in interest each year without any further effort. That made it worth while to forego some immediate pleasures in order to have more money to spend in the future. This is simply another case of giving up present enjoyment for the sake of future enjoyment. It is true that some people might save just the same even if they were not offered any interest. Probably most intelligent people would save something. They want "to provide for a rainy day," to have something to live on in their old age and to leave to their children. There would thus be considerable saving even if there were no interest. But there would not be enough saved to provide all the capital which other people want to borrow. In order to lead people to save and lend these huge amounts, the borrowers have to offer to pay interest.

**Why do borrowers pay interest?** — We now turn to the borrowers and ask, how is it that the borrowers are willing and able to pay interest? If we are thinking of those poor people who borrow to keep from starving, the answer is that they are desperate. They will agree to pay almost anything in order to get the money to keep alive a little longer. But, as we have learned, this is not the important kind of borrowing to-day. To understand interest we must inquire about the business men, who borrow for investment. Why are they able and willing to pay interest? Let us consider again the young man who wanted to borrow \$40,000 in order to start a store (see page 191). He knows that he cannot get the loan for nothing. He will have to pay about \$2,000 in interest the first year. But he has figured that with \$40,000 he could buy a stock of goods which he could within a year sell for \$50,000. His various expenses he

estimates will be about \$4,000, and so, even after paying \$2,000 interest, he will have a profit of \$4,000. That is worth while, and in order to get the capital which he needs he is willing to pay \$2,000 in interest.

This is how it is with borrowers in general. They are able to pay interest because the capital which they borrow enables them to make greater profits than they could without it. This is what we call the productivity of capital, and we learned in the first part of this book how very greatly capital increases the results of man's efforts. In a way, the capital itself produces enough to pay the interest, and borrowers are thus *able* to pay interest out of the product of the capital. They are *willing* to pay, because it is only thus that they can get lenders to give them loans.

What determines the rate of interest? — Suppose Mr. Jones decides he would like to borrow \$10,000, in order to add to the stock of goods in his store. He inquires among the people who are likely to have money to lend. He approaches Mr. Smith, who immediately asks him, "What rate of interest will you pay?" Jones says, "Four per cent." Smith says, "I have nothing to lend at that rate." After getting the same answer from others, Jones finds that he will have to offer a higher rate. So he tries 5 per cent, and then 6 per cent. At last he finds that Brown will lend him \$10,000 at 7 per cent. But then he has to consider whether he can afford to pay 7 per cent. He decides that it will not pay him to borrow as much as \$10,000 if he has to pay 7 per cent interest, and he finally borrows \$5,000 from Mr. Brown at 7 per cent.

The rate of interest a price, determined by demand and supply. — It should appear from this illustration that the rate of interest is a sort of price and is deter-

mined by demand and supply like other prices. This is exactly right. *The rate of interest is the price paid for the loan of capital, and it depends upon the demand and the supply of loans, or of capital to loan.*

**Loans and money.** — It must be clearly understood that the supply of loans is measured by the amount of capital offered by lenders, not by the amount of capital or of money in the country or the community. The amount of money loaned during a year is many times greater than the entire amount of money in existence in the country. This is because the same money may serve for many loans in the course of a year, just as it can serve for many exchanges. The total amount of loans in existence at any moment is many times greater than the entire stock of money. This does not mean that the loans cannot all be paid. Except in time of panic there is always plenty of money to pay all debts. What people really want when they borrow is not money but the things money will buy; namely, wealth, or services. And usually the first thing the borrower does after making a loan is to pay out the money he borrowed in the purchase of some other kind of wealth. The money is then ready to serve for another loan or purchase.

**The demand for loans.** — The demand for loans at any given time and place is a schedule of the amounts of capital that borrowers would be ready to take at different rates of interest. The borrowers desire loans, and are willing to pay interest for them. But loans are subject to the law of diminishing marginal utility, like anything else. The more a person borrows the less he desires additional loans. As we have learned, borrowers want loans ordinarily to invest in business. A business man will generally be willing to borrow so long as the



rate of interest he has to pay is less than the profit which he thinks he can make by using the borrowed capital. If he can borrow at a low rate he will borrow a large amount. If the rate is high, he will borrow less. And if the rate is too high, he will decide that he could not make more than that by using the capital in his business, and so will not borrow at all. The higher the rate of interest he has to pay, the less chance he has to make a profit from using the borrowed capital, and so the less he will borrow. Each borrower thus has his individual demand schedule, and when all the individual schedules are combined we have the total demand for loans.

**Demand schedule and law.**—For example, the demand for loans in a certain town on a certain day might be as follows:

DEMAND FOR LOANS, TOWN OF A, JULY 15, 1922	
<i>Rates of interest</i>	<i>Amounts that would be borrowed</i>
3%	\$1,000,000
4%	900,000
5%	800,000
6%	600,000
7%	400,000
8%	100,000

It is evident that the law of demand for loans is exactly the same as for other things, (see Chapter XVII); that is, *the amount which lenders would take varies inversely with the rate of interest.* The higher the rate of interest, the fewer borrowers there would be and the less they would take. On the other hand, the lower the rate of interest the greater the number of borrowers and the greater the amount of loans they would take.

**The supply of loans.**—The supply of loans at any given time and place is a schedule of the amount of

that lenders would be ready to lend at different interest. The supply of loans comes from the

They are the people who are willing to save any themselves the present use of their wealth. The incentive is the interest which they hope to receive. If the interest rate is very low, many people will not be worth while to save and to postpone the enjoyment of their wealth. Others will deny themselves it, but not so much as they would if they could get a greater reward in the shape of a higher interest rate. The higher the interest rate the more people will be the more ready they will be to postpone the use of their possessions. Hence the higher the interest rate, the greater the supply of loans, and *vice*

**supply schedule and law.** — The supply schedule for loans shows the amount that people would be willing to supply at each rate of interest. For example, this might be the supply schedule in the town of A on July 15, 1922:

SUPPLY OF LOANS, TOWN OF A, JULY 15, 1922

<i>Rates of interest</i>	<i>Amounts that would be loaned</i>
3%	\$ 200,000
4%	400,000
5%	600,000
6%	800,000
7%	900,000
8%	1,000,000

It is evident that the law of supply of loans is exactly the same as the law of supply for things in general (see Chapter XVII); that is, *the amount of loans offered varies directly with the rate of interest.*

**supply may be either borrowers or lenders.** — There are two ways in which the rate of interest affects the demand for loans. Some men may be either

borrowers or lenders, according to circumstances. Here is a man who has a good salaried position as manager of a factory. He finds one morning that he has inherited a considerable amount of wealth. What will he do? Perhaps now is the time for him to start out in business for himself. He could borrow some money to add to his own and so get enough to buy a factory. If he should decide to stay on in his present position, he would seek to lend his inheritance so as to receive an income from it. His decision is likely to depend on how high the rate of interest is. If it is very high, he will probably decide that he could not make the factory pay, whereas he could get a good income by lending his money. If the rate is low, the gain from lending his money will be smaller while the chances of success in a business venture are better. So there are always men who are ready either to borrow or to lend. If the interest rate is high, they lend and so add to the supply of loans; if the rate is low, they borrow and increase the demand for loans.

**The law of the rate of interest.** — The market rate of interest is the prevailing rate at which loans are actually being made in the loan market. The market rate of interest is determined by the demand and supply of loans in exactly the same way as demand and supply determine any market price. That is, the market rate of interest is the rate at which the amount which borrowers are willing to take is equal to the amount offered by lenders. If we plot on the same diagram the demand and supply curves for the Town A on July 15, 1922, we shall have Figure 25. The two curves intersect at the point  $p$ , which shows that at a rate of interest of  $5\frac{1}{2}\%$ , the amounts offered and taken are equal, each being \$700,000. Five and one half per cent is therefore the market rate of interest, and the amount loaned is

\$700,000. For further explanation and proof, see Chapter XVIII.

Changes in the rate of interest. — If the law of demand

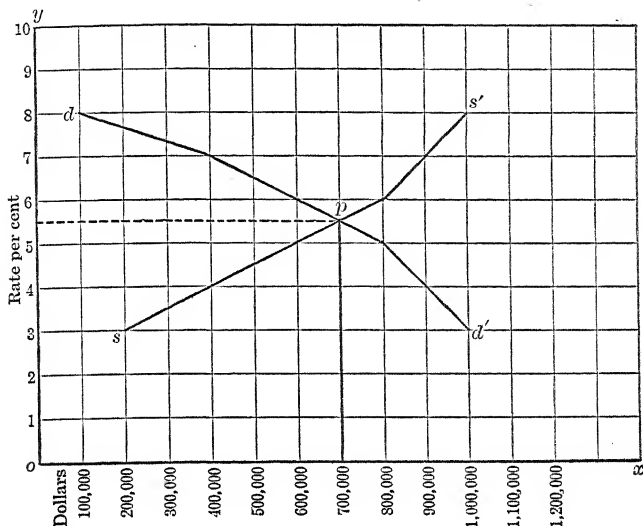


FIG. 25. DEMAND AND SUPPLY OF LOANS, TOWN OF A, JULY 15, 1922

and supply is understood, we can readily explain why the rate of interest is high or low and what makes the rate change from time to time. Let us suppose that the rate of interest is  $5\frac{1}{2}\%$ . Now suppose something happens to make business very profitable. Business men find their profits increasing. They try to get more capital so as to do a bigger business, and this leads them to the money market for loans. This increases the demand for loans and so raises the rate of interest, provided nothing has happened to change the supply.

On the other hand, what is the result of a slump in business? Business men do not care to borrow so much.

The demand for loans goes down, and this causes a fall in the rate of interest.

Changes in the supply of loans affect the interest rate in an opposite way; that is, an increase in the supply lowers the rate, while a decrease in the supply raises the rate.

### EXERCISES

1. Would there be any lending if interest were not paid?
2. How is it that certain people have money to lend?
3. Why do people lend their money instead of spending it on present enjoyments?
4. Would their conduct be different if there were no interest? Explain.
5. A has a business which is making profits at the rate of 7% on the capital invested. If he had twice his present capital he could still make 7% profits on it all. Will it pay him to borrow the additional capital? On what does the answer to this question depend?
6. State and explain the law of demand for loans.
7. State and explain the law of supply of loans.
8. What is the effect of business prosperity on the rate of interest? Draw a graph to illustrate your answer.
9. What is the effect of dull business on the rate of interest? Draw a graph to illustrate your answer.

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## CHAPTER XLV

### THE ECONOMIC RENT OF LAND

**Peculiarities of land.** — We have learned in previous chapters (Chapters XXI and XLIV) that the income of wealth may be expressed either as rent or as interest. In the last chapter we studied the income from the use of capital. We now come to the study of the income of land. There are some very important differences between land rent and the rent of any other kind of wealth, and economists have therefore invented a special term, *economic rent*, to stand for *the net income from the use of land*. Economic rent has to do with land only and is the result of two peculiarities of land which make it different from practically every other kind of wealth: (1) the amount of land is strictly limited, and (2) land lasts forever. Each piece of land is a certain portion of the earth's surface. Another important fact is that the land is not all alike. There are all kinds of land suitable for a great variety of uses. There are farm lands, wood lands, city building lots, wharf sites, etc. And there are various qualities of each kind of land. Farm lands differ as to fertility, nearness to the market, etc. Some city building lots are more desirable than others. From all these facts come some important results.

**Cost of production and market price.** — Take, for example, the land used for raising potatoes to supply a certain city. On the best land, we may suppose potatoes can be raised at a cost of \$1 a bushel. On other land, the cost is \$1.25. On still worse grades of land the cost is \$1.50, \$1.75, \$2.00, and so on. Let us assume that the

demand for potatoes in this market is as shown in the following schedule:

<i>Prices</i>	<i>Quantities that would be taken</i>
\$1.00	10,000 bushels
1.25	8,000 "
1.50	6,000 "
1.75	4,000 "
2.00	3,000 "
2.25	2,500 "
2.50	2,000 "

Now let us suppose that on the best land, only 1,000 bushels can be raised. The farmers could sell these 1,000 bushels at \$1. But that will not nearly meet the demand, which at \$1 calls for 10,000 bushels. So some potatoes will be raised on the next best land; say 1,000 bushels, at a cost of \$1.25. Still the quantity called for is greater than the quantity produced. The next grade of land will then be brought in, yielding another 1,000 bushels, at a cost of \$1.50. Finally, when the fourth grade is cultivated, the total amount produced is 4,000 bushels, and the cost of production on the poorest land cultivated, which we call the *marginal* land, is \$1.75. Now the quantity produced is equal to the quantity demanded. It will not pay to cultivate any worse land, because the cost would be more than \$1.75, and people will not buy more than 4,000 bushels unless the price should be *below* \$1.75. All this may be represented clearly by the corresponding cost schedule, which is also the supply schedule, as we learned in Chapter XIX.

<i>Marginal cost</i>	<i>Quantities raised</i>
\$1.00	1,000 bushels
1.25	2,000 "
1.50	3,000 "
1.75	4,000 "
2.00	5,000 "

This schedule shows that 1,000 bushels can be raised at a cost of \$1 a bushel; 2,000 bushels can be raised, but the cost of the last or marginal 1,000 bushels will be \$1.25 each, and so on. In other words, if the price is \$1, 1,000 bushels will be raised; to get 2,000 bushels raised, the price must be \$1.25, and so on. And evidently at a price of \$1.75, the quantities offered and asked are equal, 4,000 bushels will be raised upon the four grades of land, and the price will be the *marginal cost*; that is, the cost on the poorest land used, which we call the marginal land.

**Economic rent.** — So far this is just an application of the laws of demand and supply, which we have already studied. But now notice the different positions of the owners of these four grades of land. The owner of the best land can raise 1,000 bushels of potatoes at a cost of \$1,000. But he does not have to sell them at cost. He sells them for \$1,750 because the price has been fixed at \$1.75, equal to the cost on the marginal land. He makes an extra gain of \$750 on account of his ownership of superior land. In like manner, the owner of the second parcel receives \$1,750 for potatoes which cost him only \$1,250 to raise. His extra gain is \$500. The owner of the third parcel receives an extra gain of \$250. Only the owner of the poorest land used, the marginal land, receives no such extra gain. He sells at cost of production. This extra gain is *economic rent*. And the fact that it depends on the superiority of land over the marginal land leads us to call it a *differential gain*.

**Land is the only kind of capital that yields economic rent.** — Economic rent is due to the fact that the price is determined by the cost on the poorest or marginal land. All those who can produce at a lower cost get economic rent. Economic rent would not be possible if the better grades of land were not limited in quantity.



If there were an unlimited quantity of the best land, any amount of produce could be raised on that land, and no one owner would be allowed to reap an extra gain. Competition would bring the price down to cost of production, as we have already learned. The reason that economic rent is not received by the owners of capital is that capital is not limited in quantity. Practically any kind of capital can be produced in any quantity so long as it pays to do so. Suppose an enterprising man builds a steamboat to carry people from a city out to a certain pleasure beach. His boat becomes so popular that he finds himself able to charge fares which bring in far more money than the cost to him of building and operating the boat. He thus receives an extra gain, like economic rent. But how long will it last? Just as soon as others see his extra profit, more boats will be built, and soon the competition of the various owners will bring the fare down to cost. The extra gain will then disappear.

We have learned that competition tends to make the price of anything equal to its marginal cost of production; that is, the cost to the marginal producer, or the one who has the worst situation. There is always some slight difference between the situations of the different producers of any kind of goods, and the more fortunate ones have thus some slight economic rent. But in most lines of business the differences are not great. The competition of the better-situated producers tends to drive out the inferior ones, and so each producer is generally selling at very near his cost of production. The reason is, as we have seen, that most kinds of capital can be freely produced and so cannot yield economic rent to their owners for any length of time.

**Why land yields economic rent.** — It is not so with land. There is plenty of land in the world, but its quality

varies enormously. Some of it is not suitable for any use. Millions of acres in the frozen regions of the north and south poles are of no use to mankind. Millions of acres in tropical jungles are equally useless. Even in the United States there are barren mountains and arid plains which have so far failed to be of any service to mankind. Out of all the surface of the earth, man has picked out those parts which best serve his needs, and such lands are strictly limited. For agriculture he must have the right kind of soil and suitable climate. Mining, of course, can be conducted only where the supplies of minerals have been stored by nature. Cities are built where conditions are most favorable for trade and industry and homes. Stores and office buildings must be in certain limited areas or they will not pay. And city people must build their homes near their work; that is, clustered thickly in and around cities. Thus we see that the earth's surface consists of land of all degrees of usefulness, from that which is utterly worthless to the enormously desirable land in the heart of a great city. The owners of all land superior to that which it just pays to use (that is, the marginal land) receive an extra gain from their ownership, and this extra gain is economic rent.

**Economic rent and rent in general.** — It should be clear that *economic rent* is quite a different thing from *rent* in general, the payment for the use of any rented article. It happens, however, that land, the most important form of wealth that is commonly rented, is also the source of economic rent. This is doubtless why the term "economic rent" is used.

**Economic rent goes to the owner.** — If an owner of superior land rents it to a tenant, the tenant will have to pay him the economic rent, in addition to the rent for the

buildings and other producible capital on the land. If the tenant should refuse, there would be others who would be glad to take his place, for even after paying to the owner all the economic rent, the tenant still gets enough to cover all his costs of production, including a normal profit. The tenant could, of course, go to the marginal land, which he could use without paying rent. But on this land he could only make his costs of production anyway. So he would be no better off than if he had rented the better land and paid the economic rent to the owner. It must be remembered that there is economic rent whether the land is rented or not. If the owner uses his own land he gets the economic rent in extra gain. If the land is rented to a tenant, the tenant gets the extra gain but has to pass it over to the landlord as part of the rent paid for the use of the land.

**Rent of land and improvements.** — When people rent land, or "real estate," the rent generally consists of two things (1) the rent of the buildings and other "improvements," and (2) the economic rent which that piece of land yields. On the very poorest land, there may be no economic rent. And on entirely "unimproved" land, like a vacant city lot, the rent may consist wholly of the economic rent.

**Rent of buildings.** — We have studied the *economic rent* of land. The *rent* of buildings is a very different thing. Buildings are not limited in quantity. They may be built as fast as there is a demand for them; the only limit is the land on which to put them. The rent of buildings, therefore, has to be only high enough to make it worth while to build and maintain them. The owner of a building can ordinarily get in rent for the building only enough to cover the costs of constructing and maintaining the building and the interest on the

capital invested. If rents were higher than this, other buildings would be put up, and competition would bring the rents down to cost of production. Of course the rent of a "house and lot" may be much more than this. But that is because it includes the economic rent of the land besides the rent of the building. This fact is often overlooked. Rents for living apartments in the city of New York are very high. This is not because it is especially expensive to erect and care for houses in New York. It is because of the enormous economic rent of land in New York. A builder could put up an apartment house out in a farm pasture up-state somewhere, for which he would be glad to receive the very moderate rents which would cover his costs. But no one would live there. Millions of people must live in New York or very close to it. They have to pay the economic rent of the land upon which they live.

**Economic rent and land values.** — We learned in the last chapter that the value of an article of capital is found by capitalizing its expected income. So the value of land is found by capitalizing its economic rent. Land values are the result of economic rent. They vary all the way from the useless land, or land which it just pays to use, having no rent and therefore no value, up to the enormously valuable lots in a great city like New York. In many parts of the world there is land which "squatters" may take and use without payment of any rent. Such land has no value. The best farm land in the Mississippi valley is worth \$400 or \$500 an acre. Land in the Wall Street district of New York city has been sold for as much as \$800 a square foot. It is economic rent which accounts for these enormous variations and these fabulous land values. This matter is commonly misunderstood. People often say, for example,

that a certain merchant has to pay a high rent for the land on which his store is located because the land in that district is so very valuable. This puts the cart before the horse. The fact is that the land in that district is very valuable because merchants are willing to pay such high rents. High land values do not cause high rents. High rents cause high land values.

**Economic rent and prices.** — Another matter that is perhaps even more generally misunderstood is the relation between rent and prices. Let us go back for a moment to our original illustration of the different grades of land used to raise potatoes. We saw that the price of potatoes was determined by the demand and supply and that the supply depended on the cost of production. We also saw that the price was finally determined so as to be equal to the cost of production on the poorest land used; that is, the marginal land. The cost of production on the other better grades had nothing to do with the price. It follows that the economic rent received by the owners of the better lands did not have any effect on the price of potatoes. The price was equal to the cost on the marginal land. But the owner of that land received no economic rent. Economic rent, then, did not enter into the price of potatoes. Suppose something should happen to make it more costly to raise potatoes on the best land. This would reduce that owner's rent. Would the reduction in his rent lower the price of potatoes? Certainly not; the price would have to equal the cost on the marginal land just as before. In like manner, a reduction of costs on the best land would increase the owner's rent, but the increase in rent would not increase the price of potatoes. On the other hand, any increase in the price of potatoes would increase every owner's rent; and a decrease in price would lower rents.

**Economic rent does not enter into price.** — Therefore, the conclusion, very surprising to many people, is that economic rent does not enter into price. Here also most people get the cart before the horse. For example, how often have you heard people say something like this: "The prices at Jones & Robinson's are very high, but of course they have to charge high prices; look at the rent they pay." This assumes that a merchant charges high prices because he pays a high rent for his location. The real relation between rent and prices is just the reverse. Jones & Robinson are willing to pay a high rent for their desirable location in the exclusive shopping district because they can get high prices there. That is where the wealthy people come to trade. Jones & Robinson could rent land for a store in a cheap, slum district for very much less, but in that section their prices would have to be lower and their profits would be smaller. They are willing to pay the high rents that must be paid for land in the exclusive district, simply because there they can get the wealthy trade, charge high prices, and make bigger profits. We see then that economic rent is the result of prices, not the cause of prices. This is true because prices are determined by demand and supply. Prices must be high enough to cover the costs on the marginal land, and prices must be the same to all producers, even to those whose costs are less on account of their superior land. We thus have the economic law that, *so long as prices are determined by demand and supply, economic rent does not affect prices.*

Of course if land were not owned by individual men and women, economic rent would not be paid to private landlords. But there would still be economic rent, which would then go to the government. And prices would not be any different, so long as they were determined by

demand and supply. Whether individuals should be allowed to receive economic rent will be studied later.

### EXERCISES

1. Explain the difference between the ordinary meaning of *rent* and *economic rent*.

2. Suppose that for serving a certain city there are five grades of land suitable for raising strawberries. There is one acre of land of each grade, and the cost of cultivating an acre is \$60. The quantity of strawberries that can be raised on each grade of land is as follows: on grade A, 500 quarts per acre; on grade B, 400 quarts; on grade C, 300 quarts; on grade D, 200 quarts; on grade E, 100 quarts. (1) In order to have 1,000 quarts produced, what will the price have to be? (2) To produce that quantity, what grades of land will be used? (3) Which owners will receive economic rent, and how much? (4) Which owners will not receive economic rent? (5) If the land of grade A is leased to a tenant, who will get the benefit of the economic rent? (6) What would the answers to Questions (1)-(5) be if the people demanded 1,500 quarts?

3. Why is land generally the only kind of capital that yields economic rent?

4. Why are rents of apartments in New York city so much higher than in small towns?

5. Prices in some of the stores on Fifth Avenue, New York, are higher than in stores on other streets. Is this because the merchants have to pay such high rents? Explain.

6. What is the relation between economic rent and the value of lands?

7. Does the economic rent of farm land affect the prices of agricultural products? Explain.

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## CHAPTER XLVI

### WAGES

**Most people receive wages.** — The great majority of people receive their share of the products of industry in the form of wages and salaries. As we learned in Chapter XII, such persons are called "employees," because they are hired to work by others, called "employers." Both wages and salaries are paid to employees for their labor, and we can therefore study them together. In this chapter we shall use the word "wages" to include both wages and salaries.

**The problem of wages.** — What determines the amount of wages that men and women receive? Why do some receive low wages, while others have very large salaries? Why are all wages higher at some times than at others and in some places than in others? These are some of the questions that we should like to be able to answer about wages.

**Wages the price of labor.** — Our first step in solving the problem of wages is to notice that wages are simply a certain kind of price, the price of labor. And the price of labor is determined, like any other price, by demand and supply. On the demand side we have the employers looking for men to hire. The demand for anything always depends on its "marginal utility," as explained in Chapters XIV, XVI, and XVII. This is true of the demand for labor. Let us take, for example, a factory owner, employing 100 men (machinists) working at



lathes. He can tell about how much would be added to the output of his factory if he had one more machinist, or how much his product would be diminished if one machinist should quit. This tells him the "marginal utility" of a machinist. To get one more machinist or to keep one of his present force from quitting, he would be willing to pay a wage up to the value which this one man adds to the product of the factory. The marginal utility of a laborer, then, is equal to the value of the product which he adds. The factory owner's demand for labor, the number of men he is willing to hire, and the wages he can afford to pay thus depend on the value of the laborer's product. It is sometimes put in these words: The demand for labor depends on the *marginal productivity of labor*. We might construct a schedule and a curve showing this particular employer's demand for machinists; and if we should combine the demand curves of all employers in the neighborhood, we should have the demand for that particular kind of labor in that place. The demand for labor is subject to the same economic laws as the demand for anything else. These laws were studied in Chapters XIV, XVI, and XVII.

**The supply of labor.** — The supply of labor is the amount of labor that would be furnished at each possible wage. If we recall what we learned about supply in Chapters XVI and XVII, this matter will be clear. The supply of machinists will depend on the number of men able to perform that kind of labor and on the amount of time each man is willing to give at each possible wage. Generally, the higher the wages offered, the greater will be the supply of labor (Figure 26).

**The curves of labor demand and supply.** — We can illustrate the demand and supply of labor by means of curves, such as were used and explained in Chapters XVI-

XVIII. For example, suppose we know the facts about the demand and supply of machinists' labor in a certain locality, and have represented them in the curves in Figure 26. On the axis  $ox$  we lay off the amounts of

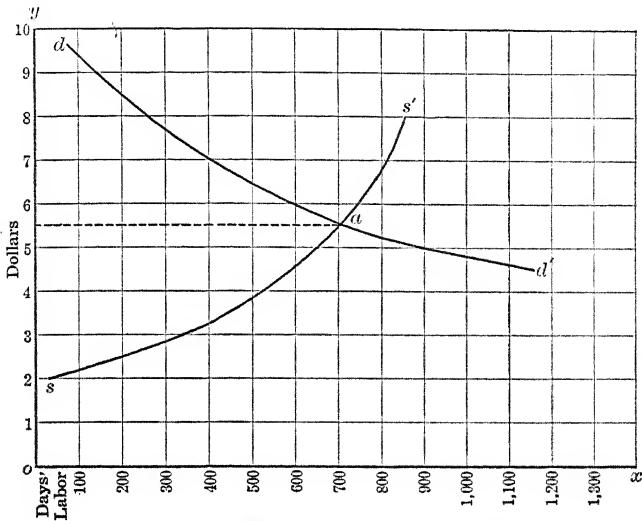


FIG. 26. DEMAND AND SUPPLY OF LABOR

labor, the unit being the labor of one man for one day, say eight hours. The unit on the axis  $oy$  is one dollar of wages for a day's work. The curve  $dd'$  represents the amount of labor employers would be willing to take at various rates of wages. The curve  $ss'$  represents the number of days' labor that would be offered at various wages. The intersection of the two curves at  $a$  shows that the wage would be \$5.50 per day and that enough men to give 700 days' labor would be employed.

**Demand for labor depends on its productivity.** — We are now ready to inquire further about the causes of

high and low wages. Anything that affects wages must work through demand or supply. We learned that the demand for labor depends on the value of the product of labor. Evidently, other things being equal, the greater the value of the product, the greater the demand for labor and the higher the wages will be. Employers cannot afford to pay wages higher than the value of the product of the laborer's work.

**Making labor unproductive.** — This fact should be quite clear from what we have learned. But it is often overlooked or not understood. Laboring men, especially organized laborers, sometimes adopt the policy of giving as little as possible to their employers in return for their wages. The rules of labor unions, either for this purpose or for the prevention of injury to the laborers' health from working under too great pressure, sometimes limit the amount of work a man may do in a day; for example, the number of bricks that may be laid. Laboring men sometimes intentionally work slowly, "loaf on the job," refuse to use improved, "labor-saving" tools and machines, and in other ways attempt to reduce the product of their labor. This policy is adopted with the idea that, if each man does less, the employer will need more men, the demand for labor will therefore increase, and so wages will rise. This idea is based on misunderstanding of the economic laws of wages. The demand for labor is increased, not by making labor less productive, but by making it more productive. It is true that, if each man produces less, the employer may have to hire more men for a time; but as a rule the wages he will pay will go down as the laborers give less service. When the labor unions adopt rules reducing the product of labor (except as really necessary for the protection of the laborers' health), they are their own worst enemies.

They are reducing the value of the only thing the laboring man has to sell, his labor, and so they are reducing the laborer's share in the product of industry. There may be some exceptions to this general conclusion. Sometimes the workers in a highly skilled trade succeed in forming a close and exclusive union with membership strictly limited and so gain a monopoly position. They may then, for a time, by short hours and slow work, take advantage of their position to exact a monopoly price for their labor. But such cases are exceptions.

**Laborers and employers suffer from inefficient labor.** — Laboring men sometimes make the mistake of thinking that anything they do to hurt their employer is a gain to themselves. They reason that, by giving inefficient work, they are getting the better of their employer and so winning out in the conflict over the sharing of the product. Now it is quite true that, by slow and inefficient work, the laborers can reduce the output of the factory and so reduce the employer's profits. But since their wages also must in the long run come out of what the employer receives for the sale of the factory's product, they seldom gain anything from the employer's loss. The laborers may feel that they are not getting a fair share; that the profits are too great. But they cannot generally help themselves by diminishing the product to be divided.

**The "public" suffers also.** — There is another party that suffers from inefficient labor; that is the general public. We have learned that the prices of things depend in part on their cost of production, and that ordinarily the lower the cost, the lower the price will be. Inefficient labor means high costs of production and high prices. So when labor is inefficient, the public suffers on account of the high prices of goods, what we call "the high cost of living." For this reason the general public is likely

to lose sympathy for those labor unions which have adopted the policy of limiting output or otherwise giving inefficient labor.

The "public" is mostly laborers. — It must be remembered that what we call "the general public" is made up mostly of the laborers themselves. Nobody suffers so much from the high cost of living as the laborers. When any group of laborers succeeds in raising the cost of the commodity they are helping to produce, they injure their employer, they injure themselves, and finally they injure the general public, including all other laborers. They reduce the product of industry and they reduce the laborers' share of the product.

Loss to laborers from high costs. — Labor's share in the distribution of the product of industry depends on (1) the amount of wages, and (2) the general level of prices. An increase in wages benefits the laborers; a reduction in wages injures them. But what they can have to enjoy depends also on prices. If prices rise, the laborers get less for their wages. If prices fall, they get more. We sometimes use the term "real wages" to mean the actual commodities and services that the laborer is able to secure in exchange for his labor, as distinguished from "money wages," the ordinary meaning of the term. Real wages are the true measure of the laborer's share in distribution, and it is now clear that anything which the laborers themselves do to raise prices comes back on them like a boomerang, by raising the cost of living and lowering real wages.

The "make-work fallacy." — The mistaken notion that the laborer gains from anything that increases the amount of labor required for production is sometimes called the "make-work fallacy." It appears in a great many forms, besides the one we have just studied. One

of the commonest forms is the false notion that the laborers are injured by the introduction of machines which reduce the amount of labor necessary for production, what we call "labor-saving devices." In former days, cloth was all made by hand, with crude spinning wheels and hand looms. It was a slow, laborious process, and it took a great deal of labor to produce a small amount of cloth. The cost of production was therefore great and the price of cloth was high. To-day cloth is made in great factories with complicated "labor-saving" machinery. The amount of labor needed for a yard of cloth is only a small fraction of what was formerly needed. The cost of production has been enormously reduced and the price of cloth lowered in proportion.

**Effect on wages.** — When the spinning and weaving machinery was first invented, the laborers working with the old hand processes complained bitterly that their work was being taken away, that the machines were "taking the bread out of the laborers' mouths." Mobs of workingmen went about smashing the new machinery wherever it could be found. But they were unable to block the wheels of progress, and what is the result to-day? The number of men, women, and children employed in our textile factories making cloth with the "labor-saving" machines is many times greater than the number engaged in making cloth before. These employees receive higher wages than were dreamed of in the early days. And finally, cloth is so much cheaper that the laborers, along with everybody else, can obtain better clothing and at lower prices than ever before. Thus "real wages" have gone up even more than money wages. Inventors, employers, and capitalists have all made gains out of the labor-saving machines. But the chief gainers have been the laborers and the general

public. The result has been exactly the opposite of the mistaken fears of the early laborers. If any one now should propose to go back to the old hand methods,

every intelligent laborer would protest.



SPINNING WITH A SPINNING WHEEL

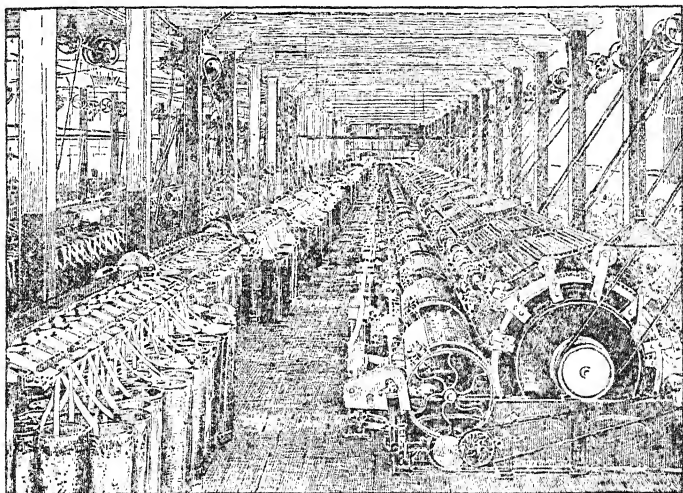
**The explanation.**

— How did this result come about? The answer is simple. The new machinery, first of all, reduced the cost of production, by reducing the amount of labor required to make a yard of cloth. That increased the supply of cloth and caused the price to fall. At the lower price, people could afford to use more cloth than before. So the manufacturers installed more

machines and hired more laborers to operate them, till they were employing more people than were ever before engaged in making cloth. Laborers, in general, have nothing to fear from "labor-saving" machinery or from anything that increases the productivity of labor. On the contrary everything that can be done, by the laborer himself or by others, to increase the efficiency of labor tends to increase the value of what the laborer has to sell (his labor), to raise wages, and to give the laboring class a greater share in the distribution of the product of industry.

**When the laborers have a grievance.** — It is clear that, in the long run, the laborers gain from all improvements

such as labor-saving machinery. If any one is inclined to doubt it, let him be asked which one of the machines now in general use he would like to see given up. Would he go back to the spinning wheel and the hand loom? Would he abolish the railroads and go back to the stage-coach? There can be no doubt of the answer to such



THE MODERN WAY OF SPINNING, IN A FACTORY

questions. On the other hand, it is true that the laborers may be injured temporarily when a new machine is first introduced. The first effect may be to throw some men out of their jobs. It takes time for industry and the market to become adjusted to the new conditions. During this transition period, the laborers may suffer. All progress involves readjustments, which sometimes do injury to certain persons or classes. This is the price we pay for progress. The laborer is foolish if he tries to block



progress. But he has a just complaint if the burden of readjustment to new conditions falls wholly on him. Society as a whole gets the benefit of the new machine or the improved process. Should not society bear the costs of transition? The laborers have a right to an affirmative answer. Certainly everything possible should be done to avoid or reduce the temporary injury to laborers from the introduction of labor-saving machines and processes.

**Labor supply and wages.** — So far we have been studying the demand side of the labor market. We must now look into some of the causes affecting wages through the supply of labor. Like other things, the price of labor will usually be high when labor is scarce, and low when labor is abundant. In a new country wages are usually high; labor is scarce, partly because the numbers of workers are fewer than in an old country, partly because so many men want to work for themselves instead of hiring out to employers. During a great war, wages are usually high, on account of the scarcity of laborers, which is caused by so many men being called to the army. In certain old countries, of backward economic development, the supply of labor is so great that wages are very low; for example, in China.

**Different grades of labor.** — It is mainly by studying the supply of labor that we are able to explain the great differences between the wages and salaries of different classes of laborers. People sometimes talk about "labor" and "wages" as though all laborers were alike and there were a dead level of wages. The facts are quite different. There are various classes of labor: the ordinary "common" or "unskilled" labor, receiving in the United States wages of two or three dollars a day; machinists, carpenters, bricklayers, and other skilled manual laborers,

receiving from four to eight, or more, dollars a day; clerks, stenographers, and others receiving wages or salaries of fifteen to fifty dollars a week; and finally, the higher grades of mental workers, managers, corporation officers, etc., receiving salaries that vary all the way from two or three thousand dollars to fifty thousand or more a year. These are by no means all the classes of laborers, but they will serve for illustration.

**Wages vary with ability.** — How can we explain the great differences in wages between the different groups of labor? If a section hand on the railroad gets only \$2.50 a day, while locomotive engineers are earning \$8.00, why do not the section hands all quit and apply for jobs as engineers? The chief reason is that the ordinary section hand is not qualified to be an engineer. He has not the mechanical knowledge, the technical skill, the power to take responsibility, and the judgment required in the higher grade work. Every now and then a section hand may rise to an engineer's position. But the majority remain section hands because they have not the ability to fill the higher place. If all men had equal ability, of course the section hands would all seek to become engineers; the increased supply of engineers would lower engineers' wages, while the decreased supply of section hands would raise their wages, till finally the wages would be the same for both grades of labor.

**"Non-competing" groups of laborers.** — But in fact this does not happen. The number of men able to work on the section is always large. The number of men able to perform the engineer's work is much smaller. The engineers do not have much competition for their jobs from the section hands. So it is with all the different grades of labor. Each grade requires a certain quality of ability, education, skill, experience, etc. Those in the

lower groups are not usually competent to perform the work of the higher groups, and they do not generally compete for the higher jobs. Of course those in the higher grades could frequently perform the work of the lower grades, but they do not compete for those jobs because the wages are lower. So we say that laborers are divided up into a number of "non-competing groups," meaning that the members of one group do not compete much for the jobs in the other groups.

**Wages depend on supply of labor in each group.** — The wages of each group are thus determined according to the supply of labor in that particular group. It is a well-known but very important fact that the supply of labor becomes smaller as we rise from the lowest to the highest grade. The supply of unskilled labor is almost always large; wages for such labor are therefore low. The supply of skilled mechanics is much smaller, and their wages are consequently higher. When we come to the highest grades, the supply is often very limited. When a great corporation, a railroad, for example, is looking for a president, there may be only a dozen men in the country with all the qualities needed for that job. This explains why a corporation will be willing to pay \$50,000 or even more for just the right man.

**"Taking work from those who need it."** — The "make-work" fallacy appears in discussions of the supply of labor as well as the demand. People sometimes say, for example, that a rich girl ought not to go to work, because she will be taking work away from some poor girl who needs it. Is this true? Let us return for a moment to our shipwrecked company of a preceding chapter (Chapter XLIII). Suppose one of the young women in that company were to say: "I have decided to do no work, but to let the rest of you support me; otherwise I am

afraid I might take away the work of some other girl." Would that proposition appeal to the rest of the company? Hardly. She would be told that the more people worked, the more things they would all have to enjoy, and that they were not inclined to deprive themselves in order that she or any other able-bodied person might live in idleness. In the world of to-day it is just as absurd to think that the workers are benefited when other people decline to work, or are injured when well-to-do persons choose to do something toward their own support.

**The real purpose of work.** — People are misled by forgetting the real purpose of all work. We do not work for the sake of working. Work is a means, not an end. The purpose of work is to enable us to have the products of labor to satisfy our wants. The greater the number of workers and the more efficiently they work, the greater will be the product to be divided. People living in idleness are not an advantage to the workers. On the contrary, for every idle member of the community those that work must work harder and have less to show for it.

**How the laborers may be hurt.** — This conclusion is clear enough when we are considering the welfare of society as a whole or of all the workers. But is it not possible that a certain class of workers may be injured by the competition of persons who could live in idleness? We have learned that the wages of certain grades of labor are low because the supply of such labor is relatively large. Now if well-to-do persons should all flock into the labor groups that are already overcrowded, the effect might well be to cause a further reduction of wages for those groups. In this case, the laborers of these groups would really be injured. On the other hand if new workers are properly distributed among the different grades of labor no harm is done to any one. And the

resulting increase in the product of industry benefits everybody, including the laborers.

**Differences in size of labor groups: natural ability.** — What is it that keeps the numbers in the higher labor groups always smaller than those in the lower groups? There are several causes. In the first place, people are not born with equal capacities. Some children are bright, some stupid. The qualities necessary for high-grade work are not given to all.

**Education.** — Still more important is education. As we go up the scale, we find that each grade of work requires more education and training than the ones below. An ignorant immigrant can soon learn enough to get a job as an unskilled laborer with a road-building gang. A skilled mechanic must have more education. An electrical engineer must have spent years going through school and college. Generally the more education a man or woman has, the better the position he is able to fill. Not all people have equal educations. Many laborers have no education at all. Most boys and girls stop before the high school. Of those that go on through high school, only a few go to college or technical school. And a still smaller number do graduate professional study after college. The higher we go in the scale of education, the fewer laborers we find.

**Other causes.** — It must also be remembered that the higher positions require sustained effort, concentration, care, and responsibility, which are a severe strain on the worker. Many people are unwilling to make the necessary sacrifice of ease and comfort. They prefer an easy-going job, free from care and worry, even though the wages are less. High wages are necessary to induce people to accept the strain and responsibility of the higher positions.

**The groups perpetuate themselves.** — Children are quite likely to grow up into the same labor group as their parents. Parents in the upper groups are likely to see that their children are well educated. Having had the advantage of education themselves, they realize its importance for their children. Also, having larger incomes, they can pay the cost of educating their children. Parents in the lower groups seldom appreciate the value of education, and their incomes are so small that they are usually unable or unwilling to pay the cost. They are more likely to put their boys and girls to work in factories or stores or on the farm just as soon as they are old enough to earn something which will add to the family income. It is natural also that children should tend to take up the same sort of work as their parents. These are the kinds of work with which they are familiar. Their parents and their family friends help them to find work. Their social feelings and customs tend to hold them in the same grades of work as their families and acquaintances. It is thus easier for children born into the upper groups to stay there than it is for children of the lower groups to rise. Of course there are many exceptions, especially in a country of freedom and opportunity like the United States. Everybody can think of numbers of men who have risen to better positions than their parents. And now and then some one falls down below his parents' level. But the general rule is that the several labor groups tend to perpetuate themselves.

**Size of families.** — This brings us to another important cause affecting the supply of labor in the different groups. Generally the people in the higher groups have fewer children than those in the lower groups. Any one, by thinking over the families he knows, will notice that the big families are more common among the unskilled

laborers, and that the families with one or two children are generally among the well-to-do workers in the higher groups. This is a very important fact in connection with what we have just learned about the way in which each labor group tends to be perpetuated from those who are born in that group. It is one of the chief causes of the smaller numbers in the upper groups and consequently of the larger wages paid to the members of the higher groups. The families of the lower groups are so large that there is always a large supply of labor in these groups, and so wages remain low.

**The law of population.** — There is, indeed, always the danger that, through the large families of the lower groups of laborers, the people of an entire nation or even of the whole world will become so numerous that there will not be enough of the necessities of life produced to support them. A great English economist, named Malthus, stated this principle more than a hundred years ago, and it has become known as *the Malthusian law of population*. The main idea is that there is a tendency for the human race to multiply more rapidly than the necessities of life can be produced on the earth. The earth is strictly limited in area and in natural resources. If the number of human beings becomes too great, there will not be enough food and other necessities to go around.

**Starvation and disease.** — When this state is reached, people must die through starvation or disease caused by lack of the necessities of life. This has happened many times in the world's history. Great famines and terrible plagues and pestilences have swept away thousands of people in nations whose numbers had become greater than could be supported. The nation of China is from time to time the victim of famine and pestilence. India has suffered likewise.

**War and population.** — War is another means of keeping the balance between numbers and the necessities of life. In ancient days, two tribes fought when their numbers became too great to be supported on the land where they hunted or tended their flocks. They fought till one tribe was vanquished and killed off or driven away. Thus the American Indians fought over their hunting grounds. Even modern warfare is largely based on the same cause. The great World War was principally due to the reaching out of nations for new territories to support their surplus populations. This brought them into conflict. The resulting war destroyed millions of human beings, and the famines and pestilences which came in its train caused the death of millions more.

**The lesson.** — Man needs to learn that there is a limit to the number of human beings that can be supported on the earth. If by conscious restraint men keep their numbers down, they may live in comfort. Otherwise nature will restore the balance between population and the necessities of life by means of famine, pestilence, and war. Thus far, this lesson has been better learned by those in the upper labor groups. It has been scarcely learned at all by those on the lowest level. This is one of the causes of the higher wages and superior economic position of the members of the upper groups. And the careless increase in numbers of the families on the lowest level is one of the chief reasons why the supply of unskilled labor is always so great and its wages so low.

**Labor unlike ordinary commodities.** — When Mr. Thompson sells his wheat (page 140), he does not see it again, and does not care who the purchaser is, or how well the wheat is cared for, or whether it is made into white bread or brown bread or chicken feed. But when a laborer sells his labor he must accompany it in his own per-



son, and he is much affected by the working conditions which are controlled by the employer. If the price of wheat rises very high, Mr. Thompson can devote more of his farm to this crop next year and raise perhaps twice as many bushels. But when wages generally throughout the country rise very high, the supply of labor cannot be increased rapidly. When the price of wheat falls, the supply offered by the farmers is quickly reduced. But when wages generally are low, what happens? Is the supply of labor reduced? It would be in a new country, where laborers could get land on which to work for themselves instead of working for unattractive wages. But under present conditions in many places the laborers, especially in the lowest groups, have no choice. If they would not starve, they must work for whatever wages are offered — and sometimes their wives and children must work also, *increasing* instead of reducing the supply as the price of labor falls.

Not only are the laws of supply and demand thus somewhat modified when applied to labor, but the free play of competition between employers and employees is affected by the average laborer's comparative lack of wealth, of education, and of ability to move readily from one region to another. Before these facts were generally recognized, many economists and statesmen maintained the *laissez-faire* theory that the government should not interfere with the conditions of employment. In the early days of the factory system, therefore, men, women, and children were sometimes forced to labor under unhealthful conditions for very low wages. But now in the great industrial countries extensive codes of "factory laws" and other laws regulating labor have been adopted for the protection of the laborers. And labor unions, at first opposed as unlawful conspiracies, have been recognized

as having a legitimate function in reducing the handicap of laborers in dealing with their employers.

**Laws regulating labor.** — Examples of the labor laws are those prohibiting the employment of children under a certain age; regulating the hours of labor by women and children and in some cases by men; requiring protective devices to prevent accidents in the use of machinery; requiring proper sanitary conditions; and "workmen's compensation acts" providing for accident insurance for laborers at the expense of the employer, who of course adds this item to the cost of production.

**Labor unions.** — In the United States, the trade unions, most of which are combined in the American Federation of Labor, aim by "collective bargaining" with employers, and by more labor laws, to secure increased wages and improved working conditions under the present economic system. The industrial unions of the I. W. W. (Industrial Workers of the World) likewise bargain with employers, but their ultimate aim is socialism, which will be discussed in Chapter L. When bargaining fails, both kinds of unions may resort to the "strike," with "picketing" and "boycotting," in industrial warfare against the employers, who on their side may use the "lockout," the "black list," and the services of professional strike breakers. As such industrial warfare is injurious to the general public as well as to employers and employees, one of the great problems for statesmen is the establishment of a fair and workable system of arbitration for industrial disputes.

#### EXERCISES

1. Define the term "marginal productivity."
2. When the linotype machine was first introduced the printers opposed it because they believed it would reduce employment. But it was soon discovered that on the contrary the machine helped to increase the demand for printers. Explain why this was so.

3. Construct demand and supply curves for labor from the following schedules and show what wage rate would be set. Assume that the unit of labor is one man's work for a day of eight hours.

<i>Number of men wanted</i>	<i>Wage per day</i>	<i>Number of men willing to work</i>
100 men	\$ 2	25 men
90 "	3	30 "
75 "	4	45 "
60 "	5	60 "
40 "	6	70 "
30 "	7	80 "
20 "	8	85 "
15 "	9	90 "

4. After a period of severe cold in a city, the plumbers found that the demand for their labor had increased because of the damage done. They argued that the cold was a good thing since it "made work." Show that this sort of employment is not a good thing for society. Give reasons why it is not a good thing for the plumbers.

5. Suggest ways in which society can protect the laborer from injury during periods when new machinery is being introduced.

6. Give the real reason why the wages of sweatshop workers are so low. What should be done to remedy this situation?

7. What developments are tending to break down the lines of division between non-competing groups of laborers? Explain.

8. Give examples of countries which are overpopulated. How do you know that they are overpopulated?

9. State the economic effects of a strike; of sabotage (wilful injury to an employer's plant or product); of the "closed shop" (excluding non-union men from employment).

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## CHAPTER XLVII

### PROFITS

**A business income account.** — Mr. Brown runs a grocery store in a small city. He buys fruit and vegetables, butter and eggs, etc., from the farmers and market gardeners, and sugar, tea, coffee, canned goods, etc., from the wholesalers. These goods he sells to his customers. He rents a store. He borrows money at the bank from time to time when he is purchasing his stock in trade. He employs two salesmen to wait on customers and a young woman who acts as cashier, bookkeeper, and stenographer. Suppose that at the end of the month of April, 1923, Mr. Brown writes up his books and finds that the income and expenses of his business for the past month are as shown in the following income account:

#### BROWN'S GROCERY STORE. INCOME ACCOUNT APRIL, 1923

<i>Expenses</i>	<i>Income</i>
Cost of goods.....	Sale of goods.....
Wages of clerks and cashier	
Rent of store .....	
Interest on loans .....	
Insurance.....	
Balance .....	

\$5,500

380

120

50

50

1,400

\$7,500

\$7,500

\$7,500

**Definition of profits.** — This account should be easily understood from what we learned about income accounts in Chapter V. The balance, or net income, represents the *profits* of the business, and we have this definition:

*Profits are the net income, or the difference between the income and the expenses, received by the owner of a business.* Mr. Brown's profits from his grocery business are whatever he has left out of the income of the business after paying all the expenses.

**Profits of various types of business organizations.** — We learned in Chapter XII that businesses are organized in three forms, the individual business man, the partnership, and the corporation. The definition of profits stated above holds of each of these forms of business organization. The profits of the individual business man belong to him; they represent his own gain from his business. When a partnership makes profits, they belong to the partners. From time to time the profits are divided among the several partners. The profits of a business corporation belong to the stockholders. When divided, they are paid out to the stockholders in the form of dividends.

**The business man's share in distribution.** — Profits are the goal for which all businesses are striving. Profits are the entrepreneur's share in the distribution of the product of industry, just as wages are the share of the laborer. We must now learn something about the economic character of profits.

**Uncertainty of profits: wages compared.** — We notice at once that there are some important differences between profits and wages. Wages are a certain definite amount agreed upon between employer and employee. The laborer is sure of his wages, so long as his employer is honest and able to pay. The laborer knows in advance just how much his wages will be. The business man does not know in advance what his profits will be. No one has guaranteed him any definite amount of profits. They may turn out large or small, or there may finally be no

profits at all. The business man's profits depend entirely on the success of his business. The laborer's wages do not depend on the success of his employer's business. If the business is very prosperous, that will not make his wages any greater. And if the business is unprosperous or a failure, he will get his wages without reduction, so long as the employer is able to pay at all.

**Business men bear the risks of business.** — This brings us to one of the most important characteristics of profits. Profits are the reward of business men for taking the direction and bearing the risks of business. In Chapter XXXIV we learned that all business in the modern world is risky. Somebody has to bear this risk, to take the chances of uncertain profits or of losses. This is the function of the business man. He, in turn, passes on some of the risks to others, by means of insurance and speculation, as we learned in Chapters XXXIV and XXXV. But there still remain the fundamental risks of business, which the business man must bear.

**What if laborers bore the risks?** — The laborer does not bear the risks of business. The chief reason that he does not is that he cannot. Let us imagine an organization of business in which the laborers bore the risks. Suppose Mr. Brown's two clerks and his cashier should say to him: "We want to share in the profits of this store and we are willing to bear our share of the risk." And suppose Mr. Brown agreed to their proposition. The four of them would agree that no one should receive wages, but at the end of the month the profits should be divided according to some rule; for example 50% to go to Mr. Brown, 25% to Jones, 15% to Baker, and 10% to Miss Smith. If this arrangement had been in effect in April, 1923, the profits to be divided would have been \$1,780. Mr. Brown would have received \$890:

Jones, \$445; Baker, \$267; and Miss Smith, \$178. This was a very good month. But suppose business fell off and there came a month in which the total profits were only \$178. Jones could not live and support his family on \$44.50, his share. And what would happen to him and the others the next month if there should be no profits at all? Jones would begin to look back with longing to the time when he got his regular salary of \$200 a month whether business was good or bad.

**Laborers unable to bear business risks.** — The fact is that the laborers are not able to bear the risks of business. They have generally nothing to live on when business is bad and there are no profits. They are not willing or able to save out of their earnings in good times enough to live on during bad times. They must have a regular definite income, regardless of the "ups and downs" of business. The plan which we supposed to be tried by the workers in Mr. Brown's grocery store is quite possible in theory. Indeed, it has often been tried in practice. It is called *coöperation* (a slightly different meaning from what we gave that word in Chapter X). But, in spite of the many attempts which have been made in various parts of the world and at different times, such coöperation has almost always failed. The experiments usually broke down when there was a period of small profits or losses. And so the wage system continues, and laborers as a class are fortunate in being able to pass on to the business men the risks of industry.

**Profits the reward for taking risks.** — Business men bear the risks. In return they receive profits. Their incomes are irregular, now large, now small, now nothing at all, and sometimes net losses in place of income. They are able to live, when profits are small or lacking, upon what they have saved in the years of prosperity or per-

haps upon wealth inherited or received from other sources. So they are able to bear the risks of business, which the laborers cannot stand. Profits are their reward and their share in the distribution of the product.

**Profits depend on chance and ability.** — The amount of profits depends on (1) the chances of business, and (2) the ability and skill of the business man. The first cause we have just studied. The second is so self-evident that it needs little explanation. Everybody recognizes that some men are extraordinarily skillful in business. Everything they touch seems to prosper. And we know that it is not all pure luck by any means. Other men are not fitted for business. They cannot make a success of any enterprise. Sooner or later they fail and go out of business, generally finding employment for wages or salaries. Between the two extremes are all the thousands of business men with varying degrees of skill and making large or small profits accordingly.

**Profits as a whole.** — It follows that profits vary enormously. Some few men of extraordinary ability are able to amass great fortunes from their business profits. Others are just able to support themselves and their families. And some make losses instead of profits. People generally have an exaggerated idea of the size of profits, because their attention is especially attracted by those who have made the big profits. We do not think so much of the thousands who get along on small and moderate profits. And we are likely to forget entirely the many men whose business ventures have failed, yielding losses instead of profits. To get a true notion of profits as a whole, we must average the good years with the bad years and we must average the profits of all business men, those who make small profits and suffer losses along with those who make fortunes.



**The choice between profits and salary.** — A man would not ordinarily go into business unless he expected that his average profits would be somewhat greater than the wages or salary he could earn by hiring out to an employer. Profits, as we have seen, are the reward for taking business risks. Why should a man take the risks unless he expects to get something more than he could earn as an employee without risk? A man who could get a job as a factory manager at a salary of \$5,000 will not go into business himself unless he expects profits averaging more than \$5,000 a year. So when a business man finds he is not succeeding and that his profits are less than the salary he could earn as an employee, he will give up his business and take a salaried position. This is what generally becomes of the men who fail in business. On the border line there are always men giving up their jobs and "striking out" into business for themselves, and others giving up their businesses and hiring out for salaries. Do not make the mistake of thinking that all profits are higher than all wages. The able men have the choice between salaried positions and independent business, as well as the mediocre ones. Some men may stay in business for profits of \$2,000 a year, because that is more than any employer would give for their services. And there are other men who cannot afford to go into business for themselves even though they may be pretty sure of making as much as \$50,000 a year, for the simple reason that other business men are willing to hire them for salaries of \$50,000 or more.

**Competition keeps profits down.** — It is probable that if we should take the average of the profits of all business men for a considerable number of years, the amount would be little (if at all) greater than the average of the wages and salaries which all of these men could have

earned. What keeps profits down is competition. When profits are extra large, more men than usual throw up their jobs and go into business. This decreases the supply of laborers and so tends to raise wages and salaries. It increases the competition among business men. As we learned in Chapter XIX, competition among business men tends to push prices down to the cost of production, which includes only enough profits to induce men to undertake the risks of business. In competitive business, therefore, profits are not likely to average much above what the services of the business men engaged would be worth if they should hire out to employers. Of course competition does not bring about a dead level of profits any more than it brings a dead level of wages. Men of different ability will still be able to secure different amounts of profits, according to their ability.

**Monopoly profits.** — When we turn from competition to monopoly, there is no such limit to the amount of profits. Monopoly price is not limited to cost of production. The fortunate owner of a monopoly business may be able to secure profits far in excess of what his ability would bring him if he had to hire out to an employer or submit to competition in his business. The subject of monopoly has been sufficiently studied in Chapter XX.

**Fees for personal service.** — There is a class of workers whose remuneration falls somewhat between profit and wages. This class includes lawyers, physicians, dentists, architects, private teachers, consulting experts of various sorts, etc. The incomes of these persons are usually called fees. We may define *fees* as *the payments for personal services of independent workers*. Fees are unlike wages in that they are not paid by an employer to an

employee. In fact fees are, on the whole, similar to profits. They are obtained by persons working independently for themselves, not under the authority of an employer. They are uncertain, depending upon the chances of the occupation and the ability of the individual. There is frequently the same choice between fees and salaries as between profits and salaries. Fees are distinguished from profits because they are not received from "business." The size of fees is generally limited by competition, much as in the case of profits. Fees represent the share in the product of industry of those who receive them.

#### EXERCISES

1. What does the business man do to earn the profit he gets?
2. Why is the laborer not in a position to agree to take profits instead of wages?
3. What is the difference between profits and wages?
4. What forces would cause the average profit to rise in this country? What forces would cause the average profit to fall?
5. Point out the similarity between profits and fees; the differences.
6. What sets the minimum limit to the amount of profit a business man is content to take?
7. Make up a definition for the term "profit."

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## CHAPTER XLVIII

### THE SHARES OF LANDOWNERS AND CAPITALISTS

It was pointed out in Chapter XLIII that each person's share in the distribution of the product of industry comes to him in return for something which he contributes to production. There are just two ways in which anybody can contribute to production: (1) by giving his services or labor, and (2) by giving the use of his land or capital. Most people contribute through labor. They "work for their living." They receive their shares in the form of wages, salaries, fees, and profits. Those forms of income we have studied in the two previous chapters. We must now give some further study to the incomes which come to the owners of land and capital in return for their use in production.

**Small land rents in a new country.** — The owners of land receive *economic rent*, the nature of which we have studied in Chapter XLV. The size of the incomes from economic rent varies enormously, according to the kind and the location of land. In a newly settled country, economic rent is very small. Land is so abundant that there is enough good land for everybody. We learned in Chapter XLV that the amount of the economic rent depends on how much better the land is than the marginal land. In a new country, there is so much land that people do not have to use any but the best. The marginal land is as good, or nearly as good, as the best that is being used. Since there is little or no difference between any piece of land and the marginal land, there

is little or no economic rent. Nobody will pay a landowner much rent, when he can go out and take without rent another piece of land nearly as good.

It results, then, that in new countries there are generally no large incomes from economic rent. No class of wealthy landowners appears. This was the condition when the first white men settled along the Atlantic coast of America. As the population grew and spread to the west, there was always a "frontier" where land was abundant and little income came to any one from economic rent.

**Large land rents in old countries.** — But as a country grows older and population increases, there comes a change. The quantity of land is limited. It cannot be materially increased by man. Hence, as population grows, there comes a time when there is no longer enough of the best land to supply all the people's needs. Poorer land must be used. And so, step by step, the margin is pushed down to poorer and poorer land, and at each step (as we learned in Chapter XLV) the economic rent of the lands already in use rises. In an old, well-settled country, nearly all the land is superior, much of it greatly superior, to the marginal land. Thus, in an old country the economic rent of land is high, often very high. In an old and thickly settled region, many persons receive incomes from the ownership of land, and in some cases large fortunes are thus built up. A social class of wealthy landowners may arise. In England and other European countries, the aristocracy is largely based on the ownership of land. The United States is still a comparatively young country, and land is abundant. But in the older parts of the country and in those sections, such as the Mississippi valley, where the land is especially fertile, large incomes are received by the owners of the land.

**City land rents.** — What makes economic rent high is the concentration of population. When there are few people in a given territory, land appears to be abundant and economic rent is low. When many people gather in one place, land appears scarce and economic rent is high. We therefore find the highest economic rent in the cities. Here the population is highly concentrated. Thousands of people live and work on a few acres of land. They must have land for offices, stores, and factories, which must all be close together. And the land for their homes must be near their working places. Hence the land in a city bears very high economic rent. The rent of a lot for a store in a city of 100,000 inhabitants may be as high as \$7,000 or \$8,000 a year. A certain corner lot in the city of New York, 100 feet on one street and 200 feet on another street, is said to rent for \$400,000 a year. The fortunate owners of the land upon which cities have grown up have reaped huge fortunes from economic rent. This, for example, was the foundation of the fortune of the Astor family in New York city.

**Economic rent in the United States to-day.** — We see that the economic rent of land varies enormously, depending on its character and location with respect to the concentration of population. In various parts of the United States to-day we can find land which it does not pay to cultivate. It yields no rent. We can find marginal land. On the rocky hillsides of New England, as well as in the arid plains of the southwest and the barren "bad lands" of Montana, Nebraska, and the Dakotas, there is land that any one could use for little or no rent. In different parts of the country we may find farm land yielding economic rent varying from a few cents to ten or twenty dollars an acre. And in the cities the economic rent of residence lots, factory sites, and land for offices

and stores runs up to hundreds and thousands of dollars per acre. So the incomes which landowners receive in the form of economic rent vary, from nothing at all to large sums, according to the character and location of their land.

**Rent, interest, and dividends.** — All forms of capital yield incomes to their owners when used in production. The income from capital in general appears in various forms, especially rent, interest, and dividends. When a man uses his own capital in business he gets an income from it, in addition to his profits, which is usually called rent or interest. And any owner of capital, which he himself does not care to use either in business or for enjoyment, may lend or rent his capital to other people, who will use it and pay him interest or rent; or he may invest it in the stock of a corporation and receive dividends. These subjects have already been studied, especially in Chapters XLIV and XLVII. Dividends are somewhat different from rent and interest: (1) The capitalist absolutely gives up his capital to the corporation without any promise of repayment, and (2) the income he receives is not a fixed amount, but is simply his share of the profits made by the corporation. In short, the owners of capital may receive a share in the product of industry on account of the use of their capital, either by themselves or by others.

**When the business man uses other people's land and capital.** — The relation between economic rent, rent, interest, and profits may be seen clearly by means of a simple example. Mr. A goes into the grocery business. He has no capital of his own. He rents from Mr. M a store and the land on which it stands. He borrows \$50,000 of capital from Mr. N with which to buy fixtures and a stock in trade and to pay his first expenses. At the end of the first year his income account might be something like this:

## A'S GROCERY STORE — INCOME ACCOUNT, 1922

<i>Expenses</i>	<i>Income</i>
Economic rent of land..\$ 800	Sale of merchandise....\$104,000
Rent of store building .. 1,200	
Interest on capital..... 3,500	
Wages of clerks, etc..... 8,000	
Cost of merchandise.... 80,000	
Insurance..... 400	
Other expenses ..... 3,000	
Balance (profits)... 7,100	
<u>\$104,000</u>	<u>\$104,000</u>

Before Mr. A could figure any profit he had to deduct from the income of his business all his costs, including what he paid Mr. M for economic rent of land and rent of building and also the interest paid to Mr. N for borrowed capital. The total receipts were \$104,000; the costs were \$96,900. The balance of \$7,100 was the profit of the business and represents Mr. A's income. Mr. M, on the other hand, had an income of \$800 in the form of economic rent from his land, and \$1,200 in rent from his building. Mr. N received an income of \$3,500 in interest on his capital.

When the business man uses his own land and capital. — Now suppose there is another grocer, Mr. B, who owns a lot and a store building of the same quality as the ones which A rented from M. Suppose also that he has \$50,000 of his own and so does not have to borrow any capital. Suppose further that he is just as good a business man as A. In that case he should make about the same profits as A, since all the conditions are the same. Mr. A's total costs were \$96,900. We will assume Mr. B had the same costs, except that he paid nothing for economic rent, rent, or interest. His total costs would then be \$91,400. If his receipts were the same as



A's, \$104,000, this would leave a balance of \$12,600. Does this mean that he has made bigger profits than A? Certainly not. Part of this balance represents the economic rent, rent, and interest which his land and capital brought to him.

Suppose his balance had been just \$7,100, the same as A's. How much profit would that represent? Remember that he might have rented his land and store for \$2,000, which is what Mr. M got for his, and he might have loaned his \$50,000 for \$3,500 interest, which is what Mr. N received. He could then have had an income of \$5,500 without doing any work at all. We have supposed that he used his land and capital in his business and yet made a total net income of only \$7,100. This would leave only \$1,600 (\$7,100 - \$5,500) as the reward for his own efforts in running the business, i.e., his profits. He had just as much ability and worked just as hard as Mr. A. Then why should he not receive as much for his labor and risk as Mr. A? Naturally he will not go to all the trouble of running a store unless he can get a fair profit *in addition* to the economic rent, rent, and interest which he could obtain by turning his land and capital over to others to use. Therefore, before any business man can tell what his profits are he must subtract from the net income of his business the economic rent, rent, and interest which he could have obtained from other people for the use of his land and capital. So Mr. B's net income from his business, amounting to \$12,600, is made up of these items:

Economic rent of land.....	\$ 800
Rent of store building.....	1,200
Interest on capital.....	3,500
Profits.....	<u>7,100</u>
Total.....	<u><u>\$12,600</u></u>

**Conclusion.** — We see, then, that the owners of land and capital receive a share in the product of industry on account of the use of their land and capital in production. They get this share apart from any immediate services they may perform. If a man owns enough capital he may live on its income without doing any work. And if the capitalist or landowner works, he receives an income from his capital or land, in addition to the wages, salary, fees, or profits which he may receive on account of his labor.

#### EXERCISES

1. As the population of the United States increases, is it likely that the amount of income going to landowners will increase or decrease? Why?
2. What determines the amount of economic rent received by a landowner on a given acre of ground?
3. What is meant by "marginal land"? Is there any such land in your neighborhood?
4. Does a man fail to get interest when he uses his own capital instead of lending it to some one else?
5. What service does the owner of land render in return for his income?
6. What service does the owner of capital render in return for his income?

**References for further study.** — Fisher, I., *Elementary Principles of Economics* (1912), pages 410-432. (See also references for Chapters XLIV and XLV).

## CHAPTER XLIX

### DISTRIBUTION AMONG INDIVIDUALS, FAMILIES AND ECONOMIC GROUPS

**The chief kinds of income.** — We have learned that the total product of industry is divided among all the people in such a way that each person's share is equal in value to the value of what he contributed to production. We have learned that what people contribute is either their labor or the use of their land or capital. And finally, we have learned that the shares received in return for labor and the use of land and capital appear in the form of incomes of various kinds. We have studied the most important kinds of income; i.e., wages, salaries, fees, profits, economic rent, and interest. We are now ready to study the actual distribution among individuals.

**Many persons receive more than one kind of income.** — First of all, we must notice that it is quite possible for one person to receive more than one kind of income. For example, the storekeeper Mr. B, in the preceding chapter, received three kinds of income. He received economic rent because he was an owner of land, he received rent because he owned a store building, and interest because of his other capital (both these two being the income from capital), and profits as the result of his labor. Most people are workers and receive some income in return for their labor. And many of the workers are also owners of land or capital, from which they receive incomes. Many a day-laborer owns a little capital, a few shares of stock in a corporation, a government bond, or a deposit

in the savings bank. He thus receives dividends or interest in addition to his wages. Probably most of the higher class of workers who receive salaries and fees have also some income in the form of economic rent, interest, or dividends. Many business men own a part at least of the capital they use in their businesses and so receive rent and interest in addition to their profits.

**Individual incomes depend on ability and possessions.** — Any given individual's income depends generally upon two things: (1) his own ability and (2) the amount and character of the land and capital which he possesses. We learned in Chapters XLVI and XLVII how wages, salaries, fees, and profits depend on the skill and energy of the individual worker. And it is clear that the amount of economic rent, interest, or dividends which any person receives depends on the amount and character of his capital.

**The causes of inequality.** — This explains why the distribution is so unequal; why some are rich and others poor. We have learned how greatly people differ from one another in ability. The result is the enormous difference in income between the lowest grade of unskilled labor and the highly paid railroad president or lawyer. Still greater differences are due to the possession of land or capital. Salaries and fees seldom run above \$50,000 or \$100,000 a year. Profits are sometimes higher, but they are exceptional. The people who receive the greatest incomes are those who own large amounts of land or capital. The income of a millionaire generally consists mainly of interest and dividends on his capital. Very few persons ever obtain such an income in wages or salary.

**How do people get capital?** — But, we may ask, where do people get their wealth (land and capital)? Why do some have so much, while others have so little or none at

all? The answer to these questions will go far to explain the inequality of distribution.

Wealth is either (1) the free gift of nature or (2) the result of production. In the first group is land. There was a time, in the distant past, when people obtained land by simply seizing it. That time has passed. To-day the land is practically all owned by individuals, and the land that is not so owned belongs to the government and may generally be obtained only by purchase, like any other kind of wealth.

**Saving.** — There are to-day just two important ways of obtaining wealth: (1) by saving out of one's past income, and (2) by obtaining it from others, through gift, inheritance, or otherwise. Whenever a person spends less than his income he accumulates capital. This capital may be deposited in a savings bank, it may be invested in government bonds or in the bonds or stocks of a corporation, it may be used to purchase land or buildings, or loaned, or used in business. The income from this capital increases the owner's income and so makes it easier for him to save more next year. This is the ordinary way in which capital is acquired.

**The power to save.** — Nearly every worker has the power thus to acquire some capital. Of course this power depends upon the size of one's income and one's needs. Those laborers at the bottom of the economic scale, whose wages are barely high enough to provide the necessities of life, have little chance to save. And if their families are large, even this small chance becomes less. As we go up to the higher grades of labor, the opportunity for saving increases because incomes are greater. The highest grades of workers are frequently able to accumulate considerable amounts of capital out of their salaries and fees. But the greatest opportunity

for the saving of capital comes from the profits of the successful business men. Every business man hopes to "make a fortune" out of his business. Many do not succeed, but many others are successful. In the United States, business profits are the chief source of the large accumulations of capital.

**The willingness to save.** — The accumulation of capital by saving depends not only on the power to save but also on the willingness to save. Saving means sacrifice. It is easier and pleasanter to spend all one's income in immediate enjoyment. It takes forethought to appreciate the advantage of giving up present pleasures for the sake of capital to be enjoyed in the future. And it takes some strength of will to make the necessary sacrifice. These qualities of forethought and will power are not possessed by all people in the same degree.

**The "self-made" man.** — The history of the United States is full of instances of "self-made" men, men who had no advantages at the start but who have succeeded in business and accumulated fortunes. Such a man, though having only a small income, nevertheless saved and so obtained the modest beginning of a fund of capital from which his later fortune grew. It is possible to point out such men in almost any town. Forethought and will power, the willingness to save, as well as business skill, were the causes of their success.

**The spendthrift.** — On the other hand the instances of those who are too careless and weak-willed to save are well known in every community. Many a young man has begun life with a well-to-do family, good education, and everything else in his favor, yet, for the lack of the willingness to save, has never been able to accumulate any wealth. Even more hopeless is the case of those who, with small incomes and few advantages, lack also the

willingness to make the sacrifice of saving. We learned, in the chapter on wages (Chapter XLVI), that the lowest class of unskilled laborers receive the lowest incomes and so have little power to save. It is in this class also that we find the least inclination to save. Even their small incomes are not expended wisely. Large families are the rule, expenses are not carefully regulated, the entire income is spent on immediate needs. There is neither the power nor the willingness to save.

**An example.**— The importance of the individual's willingness to save was illustrated at the time of the World War. Wages were very high. Many laborers who a few years before had been getting along on three or four dollars a day were receiving wages of eight or ten dollars. In spite of the increase in the cost of living, these men found they were easily able to save. How did they take advantage of their good fortune? It all depended on their individual characters. Some were wise and careful. They lived as they had lived before. They saved and were rewarded with a rapidly growing savings-bank account, or a tidy capital in government bonds, or stock in the corporation for which they worked, or the purchase of a home. Thousands of laborers were thus able to raise themselves into the class of capital owners.

But other thousands threw away their chance. Increased incomes meant to them simply the chance to indulge in new and extravagant expenditures. They bought automobiles, wore silk shirts, sat in the best seats at the theater, and, with the cheerful coöperation of their wives and children, found it easy enough to get rid of their wages, no matter how high they were. When the years of prosperity were succeeded by business depression and falling wages, they found themselves just

where they were before or even worse, with nothing to show for their opportunity to acquire capital.

**Luck in acquiring capital.** — In studying the accumulation of capital we must never forget the element of chance or "luck." Many persons have obtained their capital through pure luck. A poor farmer suddenly discovers that there is oil beneath the surface of his pasture; he becomes a rich man over night. Fortunes have been made in oil wells, in gold mines, and in other similar enterprises, where the chief factor was good luck. There is a good deal of luck in the fortune of the successful author whose book just hit the popular taste and became a "best seller"; in the huge royalties of the popular writer of "movie" scenarios; in the success of the "stars" in the theatrical and musical professions; and in the sudden wealth that has come to the fortunate inventors of popular devices. We studied the subject of business risk in Chapter XXXIV. All business is more or less risky; the element of chance is always present. Some enterprises are extremely hazardous. Those who go into them take great chances of failure and loss. Most of them do fail. But now and then a lucky individual comes out with a fortune. People seek or shun risk according to their personal natures. Those who are naturally cautious go into the relatively safe and stable businesses. They are less likely to fail, but also less likely to make great and sudden fortunes. The adventurous spirits choose those enterprises where the probability of failure is great but which offer the chance of great fortunes to the lucky few. Even the ordinary business involves some risk, and business profits are always, in some degree at least, a matter of luck.

**Chance in expenditure.** — Chance also appears on the expenditure side of the account. Sickness and accident



are not to be foreseen. A long illness or an expensive operation may wipe out all that a poor family has been able to save in many months or years. While "hard luck" is often called upon to bear the blame for poverty that is really due to inefficiency and shiftlessness, yet it is true that chance plays a considerable part in determining the possibility of saving and accumulating capital, particularly with the poor.

**Capital obtained from others: theft and fraud.** — So far we have been studying the way in which people obtain capital by saving out of their incomes. All capital must originally be accumulated in this way. But not all of the present owners of capital obtained it through their own savings. Much capital was obtained from others, through gift or inheritance, theft or fraud. There are always unscrupulous persons who are seeking to acquire the capital of others, by theft or fraud. Some are successful and are able to evade the law and enjoy their ill-gotten gains. While this means of acquiring capital must not be overlooked, it is of course only the exception.

**Gifts.** — Gifts are more common. Children of wealthy families generally receive some share of their parents' capital through gifts. Sons are "set up in business." Daughters are given something when they marry, or are provided with the wealth necessary to support them if they remain single.

**Inheritance of capital.** — But the one important means by which capital is obtained from others is inheritance or bequest. This is a subject of the utmost importance in the distribution of wealth. We have studied the subject of private property in Chapters III and VI. The right of property generally includes the owner's right to dispose of his wealth after his death. Capital accumu-

lated by one person is thus passed on to others. Many people in this way become the possessors of capital without effort on their part, either of labor or of saving. Wealth is generally, though of course not always, passed on to the children or other members of the owner's family. Large family fortunes thus grow up.

**The leisure class.** — It is the possession of capital through inheritance that makes possible a class of people who enjoy large incomes, who obtain a large share in the distribution of the product of industry without performing any labor. In the United States, however, this class is not very large. Most people, even of the wealthy class, are engaged in some business or professional enterprise, generally making use of their own capital.

**Family fortunes in America.** — Another noticeable thing in the United States is the small number of large permanent family fortunes. When once a man, through business success and careful saving, has accumulated a fortune and handed it on to his son, it would seem that the son should find it easy to hold and increase the capital and pass on a still larger fortune to his son, and so on indefinitely. Such a family would appear to have every advantage in favor of the perpetuation of its fortune generation after generation. Yet this seldom occurs for more than two or three generations. What commonly happens is something like this. The son of the man who made the fortune has all the advantages of education, family standing, and possession of capital. On the other hand his life has developed a distaste for work, an unwillingness to save, and a variety of expensive tastes which his father did not have time to develop. He also probably lacks something of his father's business ability. He undertakes to carry on his father's business. But long hours of hard work are distasteful to him and interfere

with his pleasures. He neglects the business, turns its management over to paid agents, and devotes himself to spending his income. Eventually his business declines, his income decreases, while his expenses continue to mount. The capital left him by his father dwindles. When he dies he passes on a reduced fortune to his own son, brought up in an atmosphere of idleness and extravagance and with still less ability and inclination for work. This generation is likely to see the ruin of the business and the end of the family fortune. We have an expression in America, "from shirt sleeves to shirt sleeves in three generations," which is intended to describe this tendency of family fortunes to be short lived. Of course there are exceptions. Such names as Astor, Morgan, Gould, and Vanderbilt suggest families whose fortunes show promise of long life. But the number of such families is fewer than one might at first think likely.

**Distribution by economic groups.** — We have now before us the most important influences affecting the distribution of wealth. In order to learn what the actual result is, economists have made careful studies in many countries. In the United States, for example, the statistics of the federal income tax for the years 1918 and 1920 are as shown in the table on the following page. (Since 1918 there has been an increasing tendency on the part of the larger income-tax payers to invest in tax-exempt state and municipal securities. This fact explains the decline in the numbers in the highest income groups.)

The people of any country may be divided into groups according to the amount of their wealth or incomes. At the bottom would be the paupers, those who are not able to support themselves but must depend on charity. The next group consists of those who have the necessities of life and some comforts, but not very much more,

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<i>Amount of taxable net income</i>		<i>Number of taxpayers, on incomes</i>	
		<i>of 1918</i>	<i>of 1920</i>
\$ 1,000 to \$ 2,000.....		1,506,938	2,671,950
2,000 " 3,000.....		1,496,878	2,569,316
3,000 " 4,000.....		610,095	894,559
4,000 " 5,000.....		322,241	442,557
5,000 " 6,000.....		126,554	177,147
6,000 " 7,000.....		79,152	112,444
7,000 " 8,000.....		51,381	74,511
8,000 " 9,000.....		35,117	51,211
9,000 " 10,000.....		27,152	40,129
10,000 " 11,000.....		20,414	29,984
11,000 " 12,000.....		16,371	24,370
12,000 " 13,000.....		13,202	19,388
13,000 " 14,000.....		10,882	16,089
14,000 " 15,000.....		9,123	13,739
15,000 " 20,000.....		30,227	44,531
20,000 " 25,000.....		16,350	23,729
25,000 " 30,000.....		10,206	14,471
30,000 " 40,000.....		11,887	15,808
40,000 " 50,000.....		6,449	8,269
50,000 " 60,000.....		3,720	4,785
60,000 " 70,000.....		2,441	3,006
70,000 " 80,000.....		1,691	1,969
80,000 " 90,000.....		1,210	1,356
90,000 " 100,000.....		934	977
100,000 " 150,000.....		2,358	2,191
150,000 " 200,000.....		866	590
200,000 " 250,000.....		401	307
250,000 " 300,000.....		247	166
300,000 " 400,000.....		260	169
400,000 " 500,000.....		122	70
500,000 " 750,000.....		132	98
750,000 " 1,000,000.....		46	25
1,000,000 " 1,500,000.....		33	19
1,500,000 " 2,000,000.....		16	3
2,000,000 " 3,000,000.....		11	4
3,000,000 " 4,000,000.....		4	3
4,000,000 " 5,000,000.....		2	0
5,000,000 and over.....		1	4

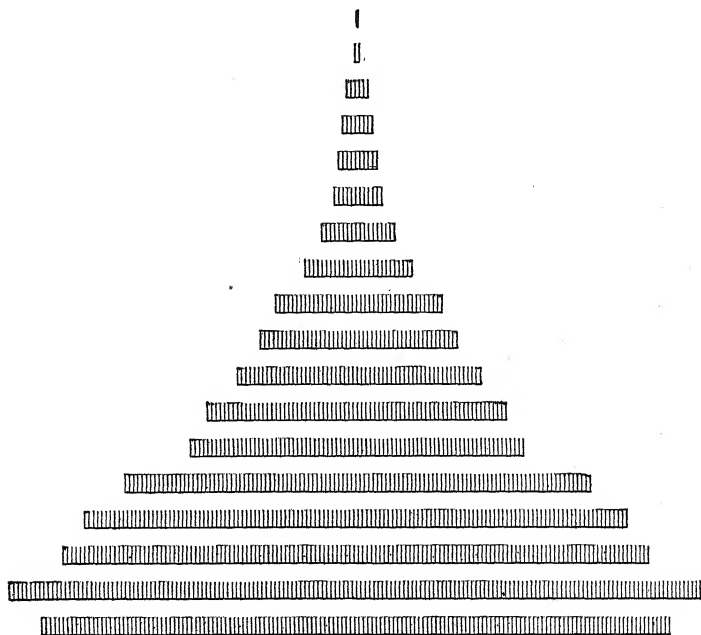


FIG. 27. THE SOCIAL PYRAMID

poor but not paupers. This is the class of the unskilled laborers. It is the largest group of all. Next comes the class of skilled laborers, clerks, etc., with somewhat more wealth, yet still to be regarded as only moderately well-off. This class is smaller than the one below. As we go on up the scale, we find that in each group there are fewer persons than in the groups below. The people whom we call well-to-do are fewer than the poor. The moderately wealthy are fewer than the well-to-do. Still fewer people are really wealthy, while the numbers of millionaires and multimillionaires are still smaller. *The larger the average wealth or income in any group, the*

*smaller is the number of persons in that group. This is the law of the distribution of wealth.*

The "social pyramid." — We may illustrate the law of distribution in this way. Imagine that we could bring together the entire population of the country and separate them into groups according to their wealth or incomes. Suppose we built a huge tower, consisting of various floors one above another, each the right size for one group. Suppose all of the very poorest class stood close together on the first floor of our tower. On the second floor would stand all those of the second group, and so on. When everybody had been arranged, the effect would be like a great pyramid a little narrowed at the base (Figure 27). This shows what "social pyramid" means in describing the way wealth is distributed.

#### EXERCISES

1. Make a list of the different classes of income, give a name to the group of people who enjoy each kind of income, and state what service is rendered in each case in return for the income.
2. Do you know of any one who receives but one kind of income? Any one who receives two kinds? Three kinds? Four kinds?
3. How does the inheritance of wealth cause inequality?
4. What characteristics must a laborer possess to become a capitalist by his own efforts?
5. If capital were all divided evenly would there long be equality of income? Give reasons.
6. What forces tend to perpetuate the leisure class? What forces tend to remove families from the leisure class?
7. Draw a curve illustrating the distribution of wealth. Explain.

References for further study. — Fisher, I., *Elementary Principles of Economics* (1912), pages 464-514. Taussig, F. W., *Principles of Economics*, Third Revised Edition (1921), Vol. II, pages 199-207; 253-277. Marshall, A., *Principles of Economics*, Seventh Edition (1916), pages 660-688. Ely, R. T., *Outlines of Economics*, Third Revised Edition (1916), pages 542-556.

## CHAPTER L

### PROPOSITIONS FOR CHANGING THE ECONOMIC SYSTEM

**Distribution and inequality.** — In the foregoing chapters on distribution we learned how the product of industry is parceled out among the several members of the community. We saw that each person's share depends on the value of what he contributes to production, either his labor or the use of his land or capital. The result, as we learned, is that the product is not divided equally. Some receive large shares, some small. This inequality is due mainly to differences in ability and to the unequal distribution of land and capital.

**The protest against inequality.** — Now there are people who believe that this distribution of the product of industry is all wrong. They say that the product ought to be distributed equally, or at least with less inequality than it is, or according to some different rule. Some feel that it is wrong that any one should receive a share without doing any work for it. It is the ownership of land and capital which makes this possible and which also is responsible for much of the inequality in distribution. Some persons therefore believe that the private ownership of land and capital should be given up. These are just a few examples of the complaints which are voiced against our economic system and the resulting distribution of the world's goods.

**Scientific judgment on the existing system.** — In all of our study so far, the purpose has been to find out how

things are, to learn the facts and the economic laws. We have not tried to determine whether things are right or wrong. This is not the business of a science. We have now come nearly to the end of our study, and we are in a position to examine intelligently some of the important complaints against the existing economic system and some of the important proposals for change. As we learned in Chapter VI, man's economic environment consists partly of customs, institutions, and laws which were made by man himself, and which can therefore be changed by man if he sees fit. It is very important to determine whether these human institutions are as good as possible and, if not, how they may be improved. But no one can do this intelligently until he has first studied the whole economic system scientifically. We must first know what the system actually is and how it works, before we are prepared to criticize it and propose changes. It is for this reason that the study of plans for social reform was put off till the last chapter of this book.

**Socialism and private property.** — The most severe critics of the present economic system are the socialists. The socialists object to the present inequality in the distribution of wealth and income. They propose to change those parts of the economic system which make inequality possible. The socialists do not all agree as to their exact program. Some, the *communists*, would abolish private property entirely. They would have all wealth owned in common by all the people of the community, state, or nation. Others, generally called *collectivists*, would have common ownership only of the instruments of production, that is, of the land and the capital used in production. They would let individuals continue to own their food, clothing, homes, and other articles of wealth which are really for the direct satisfaction of human wants.



**Public ownership of capital.** — The most important part of the socialistic program (common to all groups of socialists) is the public ownership of the instruments of production. This means that private property in such wealth would cease. All the land, the mines and forests, factories, railroads, ships, the banks, and all other wealth used in production would belong to the whole people; i.e., to the government.

**Government control of industry.** — This of course would entirely change the present methods of production. There would no longer be entrepreneurs directing industry according to their judgment, paying rent, interest, wages, and other expenses, and selling the products of industry for what they could get; taking the risks and making profits or suffering losses. There would now be just one great entrepreneur, the government. Since all land and productive capital would belong to the government, no economic rent, rent, or interest would be paid to any one. Everybody, from the lowest unskilled laborer to the skilled managers and technical experts, would be employed by the government. The government would direct industry; it would decide what things to produce, what qualities, and how much of each.

**Distribution under socialism.** — How would the product be distributed? Here also there are differences among the socialists themselves. Some would have an equal division. Some would divide the product according to the amount of labor performed by each. Others would try to base the division on the importance of the services rendered by each. Still others would distribute according to needs rather than services. But all socialists agree in wishing to abolish the present system of distribution, by which each person receives for his services or the use of his capital what they will bring

in the market, and then spends his income for the things he wants at prices determined by demand and supply. Under socialism, each person would work for the government. He would either receive his share of the product directly in goods (food, clothing, etc.) handed out to him from the government warehouses, or he would be paid in money with which he could buy what he wanted from the government stores at prices fixed by the government.

**Scientific test of socialism.** — This is a brief statement of the program of socialism. What shall be our judgment upon it? In the first place, socialism would do away with some features of the present system which most people regard as defects. Presumably there would be no leisure class, enjoying great wealth but performing no services. Everybody presumably would have to work for his living. There would no longer be the extreme differences between rich and poor which now exist. Wealth and income, if not equally divided, would at least be more evenly distributed than at present. The existing system is not perfect. The socialists have been very keen in calling attention to its defects. We need to remember, however, that no human institution is perfect. The question is whether the socialistic system promises, on the whole, to be more nearly perfect than that under which we are living. Our scientific study of economics ought to throw some light on this question.

**What makes people work?** — Under the present system the one great motive that leads people to work is the hope of gain. As a general rule, the harder and more efficiently people work, the greater is the income which they obtain for the satisfaction of their wants. Under socialism, the motive of private gain would largely disappear. It would disappear entirely if all private property were abolished or if distribution were based on

a rule of exact equality. And even if we did not go to these extremes, it is certain that no considerable accumulation of wealth would be permitted. It is doubtful if anything could take the place of this motive. The worker, under the socialistic state, knowing that he was sure of his share anyway and had little or nothing to gain from special exertion, would tend to work just hard enough to escape the reprimand of the overseer. This is the way slaves work. It is quite possible to find evidence of this kind of work to-day among government employees who feel secure in their positions through political influence.

**The managers of industry.** — The loss of motive would be bad enough as respects common labor. It would be fatal in the case of the skilled workers and those who bore the burden and responsibility of management of industry. The present-day entrepreneur devotes all his skill and strength to making his business a success. He is willing to work early and late, day and night, to risk his fortune and his health, in the hope of winning large profits; he does everything possible to keep down the costs of production and to increase the product of industry; all for the sake of the gain he hopes to make. What would lead him to work like this if he were merely the appointed manager of a government enterprise? He would be sure of his moderate reward anyway; he would have little or nothing to gain from the success of the enterprise; why should he exert himself?

**The motive offered by socialism.** — The socialists claim that those who served the people well would win public esteem, they would be promoted to higher and more honorable positions under the government, and this would be motive enough to cause them to give their best service. But this claim hardly agrees with the facts

as we know them. While popular esteem is relished by all, few men will work as hard for it as they will for personal gain. Moreover there is no guarantee that popular esteem will always go to those who have labored most efficiently. Public approval is notoriously capricious and fickle. It frequently overlooks the conscientious, efficient public servant, to shower its favor on one whose only claim is his knowledge of how to attract attention to himself and tickle the popular fancy. Again, promotion in the government service is not nearly so likely to depend on efficiency as in private industry. Political considerations are likely to decide the matter.

**What present government industries show.** — There is evidence on this point from such government industries as we already have. We have learned why the business man devotes all his skill and energy to keeping down costs and increasing production. His profits are at stake. The paid manager of an incorporated business does the same. His position and salary and his chance of promotion depend on his success. But the government officers in charge of the post office, the government printing office, a city railway system, etc., do not have the same interest in the efficient and economical conduct of the government's business. Their positions depend on their popularity with the voters and their standing with those above them. The favor of those on whom they depend rests on political considerations rather than on their efficiency in the conduct of the government business. These are serious defects in our politics to-day. We have seen their effects in the government industries which we now have. When it is proposed to turn all industry over to the government, these defects loom up as overwhelming obstacles.

**Effect on accumulation of capital.** — Another weakness

of socialism is its effect on the accumulation of capital for use in production. We have learned how important a great stock of capital is in modern industry. We have learned that capital comes from saving by those who voluntarily consume less than their total incomes. We have learned that people are induced to save by the payment of interest and by the hope of accumulating a fund of wealth for later enjoyment, or to support them in their old age, or to provide for their wives and children. But all this would be abolished under socialism; there would be no interest payments and no one would be allowed to accumulate a private fortune. The individual motive for saving would be gone. If capital were to be accumulated, the saving would have to be done by the government. From what we know about our own governments, national, state, and local, the prospect is anything but hopeful. The thing that makes a public official popular is spending the government money, not saving it. No government in the United States has ever done any saving. Governments have always been very good at spending. When governments need capital for public enterprises they have to borrow it from individuals who have saved it. The result of transferring the responsibility for saving capital from the people to the government would almost certainly result in the rapid decline of capital and so in reducing the efficiency of production.

**Weakening production.** — If socialism would weaken the motives for hard and efficient labor and the motives for saving and accumulating capital, the necessary result would be a decrease in production. The total product of industry would be less. Even though there might be a fairer rule of distribution, this is too high a price to pay for it. We learned in the last chapter that, though

there are individuals who possess vast wealth, the number of the wealthy is small compared with the whole population. If all the wealth in the world were equally divided, the individual gain to the poor would be very small indeed. A small decline in production would more than offset any possible gain that could come to the poor through a different scheme of distribution. What would be the gain from a fairer plan of distribution, if the amount to be divided were so reduced that everybody received less than before? The thing of first importance is that wealth be produced. If in seeking to improve distribution we weaken production we are merely "jumping from the frying pan into the fire."

**The Russian experiment.** — The Bolshevik government of Russia, after the World War, undertook to abolish private business and to bring all industry under the government. Within three years the whole national system of production, farms, mines, factories, railroads, stores, etc., had broken down. The great nation of Russia, once wealthy and powerful, was brought to the verge of starvation. Millions of the people perished and a worse disaster was averted only through the generous gifts of food and other necessities from America and other capitalistic countries. In this situation, it was cold comfort to tell the Russian people that their new system had removed inequality. It had, indeed, made everybody equal, by bringing everybody down to the level of starvation.

**The matter of risk.** — There is also the matter of risk. We have learned that all enterprise is risky. To-day the private entrepreneur bears the risks. He tries experiments. If he succeeds, he is rewarded by extra profits, but the ultimate gain from the new discovery goes to the public, in lowered costs and increased product. If

the entrepreneur fails, he bears the loss. Thus the public has the advantages of invention, experiment, and progress, with the least possible risk. Under socialism the whole people would have to bear the risks of industry. They would derive no more benefit from progress than at present. In fact there would probably be less progress. But all the losses from mistakes of the public officials in charge of industry would fall upon the people.

**War industries of the United States government.** — Illustrations are to be found in the war experience of the United States government. During the war the government went extensively into the shipping business. The enterprise was not profitable economically, and the government lost many millions of dollars. Under private industry such losses would have fallen upon the individual investors in the business. As it was, millions of dollars in taxes had to be collected from the American people to pay the losses of the United States Shipping Board. In like manner, the government lost heavily from the operation of the railroads during the war. These losses were borne by the taxpayers, instead of the stockholders of the railroads, as would have been the case under ordinary circumstances.

**Personal liberty.** — Socialism would not only abolish the private ownership of capital. It would largely do away with personal liberty. To-day, as we learned in Chapter VI, each person chooses his own calling. The result is that, on the whole, people are engaged in the kinds of work for which they are best fitted. Under the socialistic rule, each person would be assigned to his particular work by the authority of the government. The present system is, of course, not perfect. But it is certain that it comes nearer to putting each person where he can be of most service and get the most enjoyment

from his work than could any system of compulsory government appointment. The socialist régime would reduce efficiency and increase people's dissatisfaction with their jobs.

**The threat to freedom.** — It is impossible to see how socialism could work without the complete sacrifice of personal liberty. Every individual would have to be ordered to his place of work. He would have to accept the reward handed out to him. Refusal to accept the orders of the government could not be tolerated. Only by the most absolute of military discipline could such a system be maintained. The love of liberty is one of the strongest of human sentiments. Through the whole history of the world, men have struggled and fought for their liberty. Slowly and painfully they have at last secured at least a moderate degree of freedom. Socialism proposes to take it away. The socialistic régime would at once come into conflict with man's love of freedom. As men have fought to gain their freedom, so they would fight to keep it. Only by the ruthless exertion of brute force could socialism maintain itself. The example of Bolshevik Russia again teaches us a lesson. The Bolshevik authorities maintained their position and enforced their system by means of an authority more despotic and ruthless than ever existed under the czars. Submission of the people was gained only by means of wholesale persecution, imprisonment, and slaughter of those who resisted. It is not a pleasant prospect that socialism offers to free men and women.

**Will socialism improve distribution?** — We have so far considered the unfortunate effects of socialism upon production. On the side of distribution the socialistic program is not so attractive as it may at first appear. It is doubtful if an equal distribution would promote justice



or human happiness. Human beings are not equal. There is the greatest inequality in ability, energy, responsibility, and public spirit. It is hard to believe that the best distribution is one that ignores all these differences. The present arrangement, with all its imperfections, does, at least, distribute the rewards with some rough relation to individual efforts and deserts. It is doubtful if socialism has anything better to offer.

**Practical difficulties.** — On the practical side, there is reason to believe that the socialistic plan of distribution would break down. An exactly equal distribution might possibly be made to work. But even the socialists generally deny that this is their goal. As soon as it is attempted to distribute the product, by artificial rules, according to labor performed, or to the importance of individual services, or to needs, or according to any other scheme, the practical difficulties look insuperable. Mistakes, injustice, favoritism, "graft," and general discontent and revolt would seem to be the inevitable results.

**Conclusion.** — In conclusion, socialism offers us a plan of distribution which, on the whole, does not appear likely to be any improvement over the present system. On the other hand, socialism threatens to weaken the foundations upon which the successful production of wealth must rest. The judgment of scientific economics is against it.

**Other proposals.** — Socialism proposes a complete overthrow of the present economic organization. There are other proposals for social reform which do not go so far, but would simply pick out and remedy certain alleged defects in the present system. We shall consider a few examples.

**Land nationalization.** — There are those who believe that the private ownership of land is particularly bad. While not interfering with other forms of private

property, they would have the government own all the land. We have learned that land is originally a free gift of nature, that it differs from most other kinds of wealth in being limited in quantity and of perpetual life, and that it therefore gives to its owners a peculiar sort of income called "economic rent." For these reasons, there is some justification for the feeling that the land should belong to the people as a whole and that no private individual should derive a special income from its use.

**The case against nationalization.** — It is thus possible to develop a strong argument in favor of government ownership of the land. The negative argument is a practical one. One of the clearest lessons of the world's economic history is that the most efficient use of the land comes when it is in the hands of private owners. Governments have proved to be very poor landowners. In the Middle Ages most of the land belonged to the government. As population increased and the need of larger product from the soil appeared, the government lands were gradually disposed of to private owners. To-day few governments hold much land, and those that do are the backward ones, such as India and Russia.

**Advantages of private ownership.** — To obtain the fullest product from the land, there must be careful, painstaking, intensive cultivation. The individual owner will give his land this kind of cultivation. It belongs to him. All that he does to improve it by hard labor and "loving" care, all that he spends for draining and fertilizing, are for his own gain and for his family. He will work and spend to improve his land, and the crops will increase accordingly. The marvellous results of the care and labor of small landowners in increasing the fruitfulness of the land are to be seen all over the world. Exactly the opposite has come from government-owned lands.

Now the land is the final source of all the wealth that satisfies our wants and makes life possible and enjoyable. Anything that increases the product of the land is a benefit to mankind. Anything that would reduce the productivity of the land would be a world calamity. Therefore, in spite of some evils resulting from the private ownership of the land, we conclude that a change to government ownership would be a mistake.

**The single tax.** — A change which is vigorously advocated by some people is known as the *single tax*. The final goal of the "single-taxers" is a tax of 100% on the economic rent of the land. They would like to see the government take away from the landowners the entire economic rent. Since, as we have learned, the value of land depends on its economic rent, this would be equivalent to taking away the entire value of the land. The single tax is ultimately land nationalization.

In their practical programs, the single-taxers do not always go to this extreme, but advocate any measure that is a step in the direction of their goal. They thus work for heavy taxes on land values (though not equal to the whole economic rent). They advocate discrimination in taxation between land and other kinds of wealth and property, seeking heavy taxes on land and lighter taxes or even exemption from taxation for other wealth and property.

**Injustice of the single tax.** — In its extreme form, the single tax is open to the objections already raised against land nationalization. There is besides a special objection to the single tax program, which must appeal to any fair-minded person, even though he believed in government ownership of land. This is its injustice. Whatever anybody may now think about private ownership of land, this has been the rule up to the present, a rule

sanctioned by law and custom. The present owners of land have come into possession in good faith under the present rule. Many of them have paid for their land its full present value. To proceed now to take from them the whole or a part of the value of their land or to impose upon them discriminatory taxes would be an injustice. If there is to be land nationalization it can be accomplished justly only by purchasing the land at its fair value from its present owners. Any other procedure is like changing the rules of a game, while the game is in progress, to the disadvantage of one contestant.

**The "unearned increment" tax.** — This injustice is recognized by some of the more moderate single taxers and advocates of land nationalization. They would "let bygones be bygones," and take by taxation only the future increase in land values or a part of it. There is nothing unjust about this. If carried to the extreme it would have the bad effects of land nationalization. But a moderate application of special taxation of the "unearned increment" of land values would probably have no serious effects on the development and use of the land. Such taxes have actually been in operation for many years in certain European states and cities.

**Abolition of inheritance.** — Another reform which is advocated by some is the abolition of inheritance. We have learned that the right of bequest is part of the right of private property and that the inheritance of capital is one of the chief causes of the inequality in the distribution of wealth and income. If inheritance were abolished, each individual could accumulate all he was able and use it as he wished during his lifetime. But whatever wealth he left at death would become the property of the government. Not being permitted to inherit wealth, all individuals would start life on more nearly equal

terms than now. If inequality still existed, as it undoubtedly would, it would be much easier to justify it on the ground that all started with equal opportunity and that those who had succeeded in acquiring more wealth than others had done so through their own efforts.

**The case for inheritance.** — We have here a strong argument for the abolition of inheritance, based on considerations of justice and equal opportunity. The negative argument, as in the case of the question of land nationalization, is a practical one. It also rests upon the necessity of accumulating capital. One of the strongest motives leading men to save and accumulate capital is the desire to provide for their children after they have passed on. Take away this right, and saving would almost certainly be diminished. The public would suffer from the decreased accumulation of capital.

**Taxation of inheritances.** — It does not follow, however, that inheritance should be left entirely unrestricted. It is possible to find a middle ground, by which we can diminish somewhat the evils of unrestricted inheritance while not seriously weakening the motive for saving capital. This is accomplished by means of heavy taxation of inheritances. The government does not take all of the wealth, but it does take a part. We learned about inheritance taxes in Chapter XL. We see now that the inheritance tax is of importance, not only as a means of obtaining revenue, but as a device for promoting economic equality. Inheritance taxes may be much more severe than other taxes, without doing injustice or seriously diminishing the accumulation of capital. At the same time they furnish a means of reducing somewhat the present evils of inequality of economic opportunity.

**General conclusions.** — There is not space in this book to study other proposals for overthrowing or modifying

the present economic system. From what we have learned of that system and how it works, together with our study of socialism, land nationalization, and inheritance, we may draw certain general conclusions.

**Mistakes of the socialists.** — The economic system under which we live is not perfect. Probably no human institution can be perfect. The socialists and other advocates of social reform have pointed out defects in the present system, many of which will be recognized and admitted by any careful student of economics. Where the socialists and other "radical" reformers make their first mistake is in exaggerating the defects and failing to appreciate the desirable features of the present system. They make a worse mistake in the character of the schemes which they propose as substitutes or modifications. Their remedies often appear worse than the disease, and almost always their defects are such as to make them unworkable.

**Blunders of the "reactionaries."** — In rejecting such proposals, however, we must be on our guard against the opposite sort of mistake. The attitude of the stubborn "reactionary," who shuts his eyes to every defect in the existing order and will listen to no suggestion of change, is no less blind and foolish than that of the "radical."

**Social evolution.** — The careful student of economics will recognize that human institutions are never perfect and that our economic environment is not a fixed thing but is constantly changing. There have been important changes in the past, and there will undoubtedly be changes no less important in the future. It is to the interest of mankind that these changes should come about gradually in an orderly course of development, not through violent destruction and revolution. Neither the blind "conservative," who resists all change, nor the

reckless "radical," who would smash existing institutions and offer ill-considered substitutes, is on the right track. The law of social progress, as of biological development, is change through evolution, not revolution.

### EXERCISES

1. What features of the present order of society do the socialists particularly condemn? What are the causes of these things?
2. What is the difference between the communists and the collectivists?
3. Under socialism how many kinds of income would there be? Why?
4. State the arguments in favor of the institution of private property.
5. Why are people less likely to work industriously and efficiently under socialism than under private enterprise?
6. What is the motive to-day inducing men to save capital? How would this motive be affected by socialism? By abolition of inheritance?
7. What would be the injury to society if capital were not saved?
8. State and explain the political weaknesses of socialism.
9. Why would socialism destroy personal freedom?
10. How would socialism change the distribution of income? Would this be an improvement? Explain.
11. Would land nationalization do away with inequality? Give reason. What is the "single tax"?
12. State the argument for and against inheritance. Is a compromise possible and advantageous?
13. What mistakes are made by the "reactionaries"?
14. What is the difference between evolution and revolution?

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